THE OIL WEEKLY

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The Oil Man's Calendar

APR. 1-2	American Petroleum Institute Division of Production, Southwestern District, Dallas, Texas.
8-10	Petroleum Industry Electrical Association, Shreveport, Louisiana.
13	American Petroleum Institute, Division of Production, Pacific Coast District, Los Angeles.
15-16	National Petroleum Association, Cleveland, Ohio.
26-28	Western Petroleum Refiners Association, Hot Springs, Arkansas.
MAY 6-7	American Petroleum Institute, Division of Production, Eastern District, Columbus, Ohio.
10-16	American Gas Association, Natural Gas Department, Kansas City, Missouri.
19-21	Natural Gasoline Association of America, Tulsa.
23-27	National Association of Purchasing Agents, (Oil Company Buyers Group), Pittsburgh, Pa.
JUNE 1-3	American Petroleum Institute, Mid-Year Meeting, Colorado Springs, Colorado.
10-12	Pennsylvania Grade Crude Oil, Association, Sailing from Buffalo, New York.
11	Interstate Oil Compact Commission, Santa Fe, New Mexico.
14-19	Second World Congress of Petroleum, Paris, France.
25-27	National Oil Scouts Association, Dallas, Texas.
OCT. 11-16	Oil World Exposition, Houston, Texas
29-30	Mid-Continent Oil and Gas Association, Texas Division, Dallas, Texas.
NOV. 9-12	American Petroleum Institute (Annual) Chicago.

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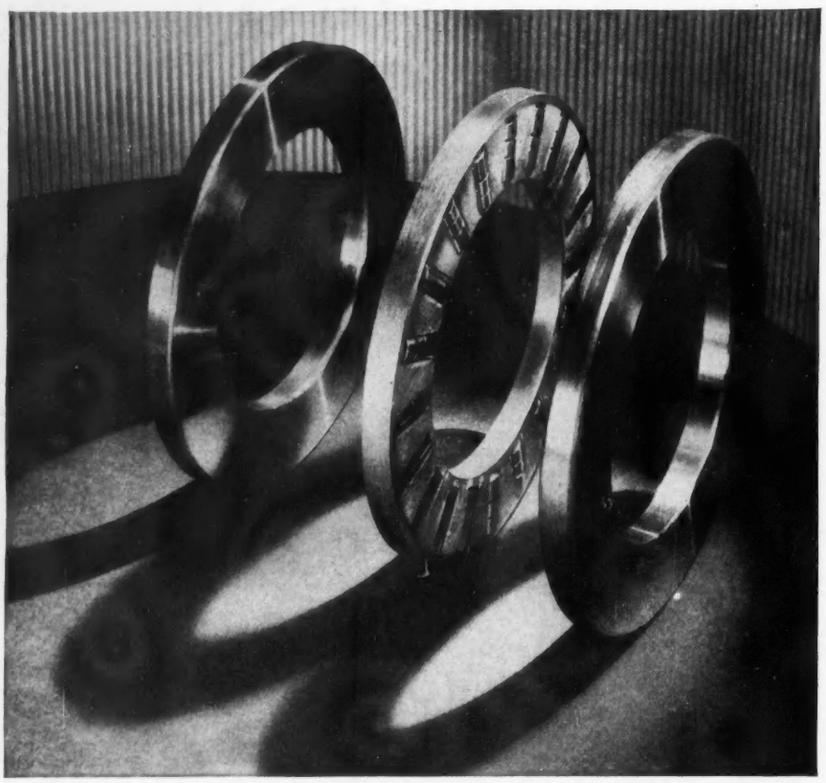

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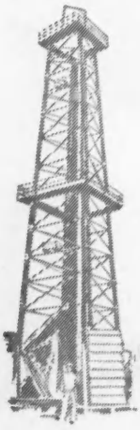

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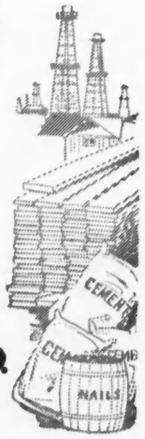

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LOOKING AHEAD

WITH THE EDITOR

Production - Consumption balance outlook . . . Anahuac geology . . . Future Oil Prospecting . . . Water Flooding.

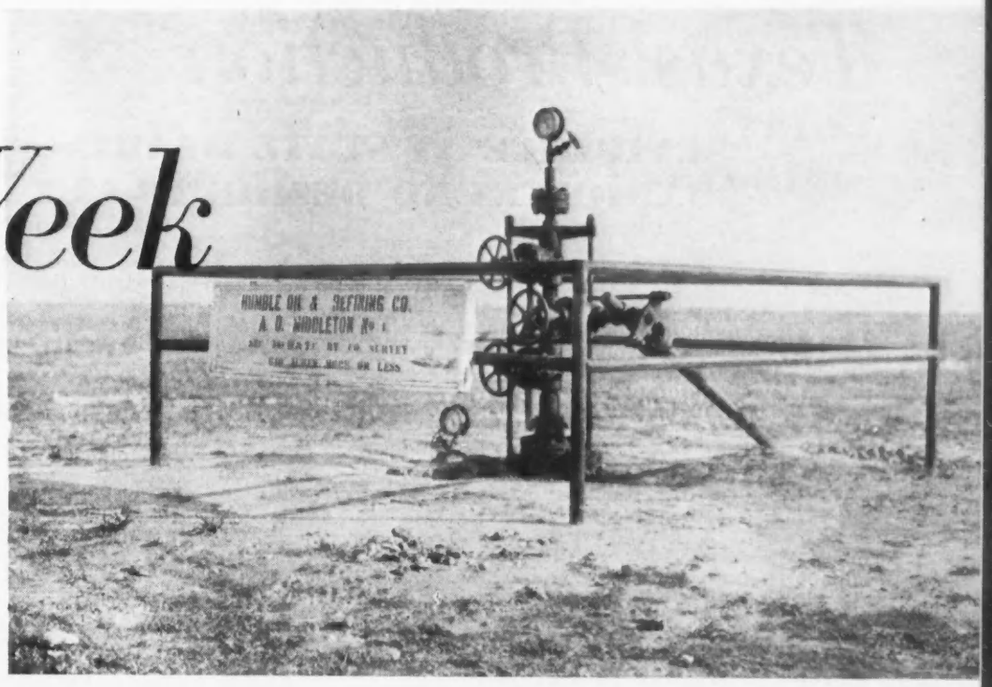
CRUDE production is exceeding current consumption. Will the output of oil continue its upward trend of the past three months, or will there be a movement to curtail its growth? All oil men are vitally interested in this question, and an insight into the outlook for April will be available the coming week. It is anticipated the Bureau of Mines will announce its monthly recommended production, and that several leading producing states, including Texas, will release their official allowables.

IN this issue we start you on an extensive trip through the interesting Anahuac field, and we will continue our journey next week. The faulty geological conditions that exist on this salt dome will be the specific subject, and will be elaborated by numerous cross sectional views.

THE art of prospecting for petroleum has developed to a high degree of perfection, but it has come about naturally as an outgrowth of the production department. Functionally, no branch of the entire industry is more important than the exploratory branch and it should be established as an independent department. These are the statements of E. DeGolyer before the American Association of Petroleum Geologists, and we are going to let him tell some of the advantages that follow such form of organization.

WATER flooding continues to be of growing interest in the Mid-Continent, and a series of articles on this subject will be commenced shortly in THE OIL WEEKLY.

This Week



Two Years Old

ON March 16, 1935, Humble Oil & Refining Company completed Middleton 1, shown to right, to discover the Anahuac field in Chambers County, Texas. Little was it realized that the well marked the opening of the largest salt dome field yet found, but that is what time has proved. The field also is of importance because of the modern engineering principles being used. The complete history of Anahuac development and operating methods are to be described in a series of articles starting on Page 37.

EXCESSIVE crude oil production has resulted in additions to storage since the beginning of this year. The additions became more serious than before when higher state allowables were inaugurated March 1. Texas production, particularly, has been above market requirements, as shown by additions to storage in the state. Stricter state allowables in coming months are desirable, to restore the balance between supply and demand. **Page 14.**

PROVED oil reserves of the United States on January 1, 1937, are estimated at 13,063,000,000 barrels by an American Petroleum Institute committee composed of a number of leading oil men. This is an increase of 886,000,000 barrels over a similar estimate made as of January 1, 1935. The figures are believed conservative. Texas accounts for approximately 50 percent of the known reserves. **Page 19.**

THE discovery rate of oil finding was uniformly accelerated as the industry expanded subsequent to 1900, and from 1926 to 1930 it reached a peak more than double the current rate of consumption. Thereafter it declined sharply until from 1930 to 1935 it was but about 70 percent of prevailing consuming demand. Geological exploration has been the most effective finding method in past, but it is yielding to geophysics. Apparently present crude reserves are adequate, but they should be maintained to permit efficient production. These are only a few of the interesting conclusions made by Wallace E. Pratt from a study of past discoveries to determine if some means could not be found for gauging future discoveries. **Page 16.**

CURRENT SITUATION

Outlook.—Improved, with stricter crude control in prospect.

Crude Market.—Generally steady.

Refined Oil Markets.—Gasoline prices higher at refineries.

Crude Production. — Up 44,875 barrels; another new peak.

Crude Runs to Stills.—Up 55,000 barrels to 2,985,000 daily in week ended March 13.

Crude Stocks.—Up 1,490,000 barrels in week ended March 6; gain of 4,227,000 in 5 weeks.

Gasoline Stocks.—Up 1,134,000 barrels in week ended March 13, to 81,236,000; new peak.

Gas and Fuel Oil Stocks.—Down 151,000 barrels in week ended March 13, to 98,964,000 barrels.

Drilling. — Completions down 40 last week; total 480 wells.

See **MARKET SECTION** *for Details*

JUNK them as soon as they no longer pay. That seems a simple rule to follow in any business operation. But lack of cost data on depleted wells often has kept derepit pumpers going long after there was chance for profit in the volume of oil recovered. It follows that individual well performance should be studied on each lease, both as a means of knowing if there is a profit and of determining if rearrangements might produce a profit. And then there is occasion for pause in the circumstance that leases once abandoned are lost to the operator, and some "depleted" leases have again become profitable. Anyway, when to abandon is among the problems. **Page 30.**

WHEN water has been logged in Edwards lime in Southwest Texas before logging oil sand, heretofore it has always resulted in automatic abandonment. But this week a desire to see what was below the water in the lime resulted in showings of oil. A possibility suggests itself that much previously condemned Edwards lime territory may be redrilled. **Page 75.**

EASY erection, dismantling, transporting and high salvage value are outstanding features of an interesting uniform field boiler setting being used in California. It is designed in such a manner that any number of units may be installed, and others may be added or eliminated at any time. Skids permanently attached aid in transportation operations. **Page 20.**

Texas' Production

EVIDENCE AT STATE HEARING INDICATES NO DESIRE TO CUT

Austin. — Despite statements from Railroad Commissioner C. V. Terrell (see below) prior to the hearing that the Texas allowable should be reduced during April, evidence introduced at the statewide proration hearing in Austin March 19 indicated that there was a market for all oil produced.

Mills Bennett Production Company asked for a cut of five barrels per well in Lopez, but no other suggestion was made that the allowable for any field be reduced.

The recommendation to the commission from the United States Bureau of Mines was again increased, this time by 41,300 barrels over March. The bureau recommended that Texas produce 1,297,900 barrels daily during April.

Although the Texas allowable on March 18 had increased to 1,430,969 barrels daily, the nominations filed by purchasers of Texas crude totaled 1,636,019 barrels, or 205,050 barrels more than the current allowable. This was a gain in nominations of 65,788 barrels over the month of March.

During the first 18 days of March there were completed in Texas 532 new oil wells. Assignments of allowances to these wells resulted in an increase of 32,455 barrels in the total state allowable.

Operators from several West Texas fields asked for small increases, usually intended to equalize allowances made to all fields of a similar type in the area.

East Texas Pressure Drop Stops

V. E. Cottingham, director of production for the commission, testified that East Texas pressure dropped only .35 pounds from February 12 to March 12, a loss in pressure of .0626 pounds for each million barrels of allowable. The allowable for the pressure period averaged 452,911 barrels daily, and was slightly above 455,000 barrels on March 18. Average pressure for the field on March 12 was 1170.47 pounds.

Cottingham pointed out that since the commission began taking pressures in 1934 the average decline had been .0235 pounds per million barrels allowable, and that the average decline for the past two months had been .0225 pounds.

While Cottingham made no recommendation that the commission maintain its current East Texas allowable of 2.32 percent of the hourly potential, his testimony indicated that conditions in the field were about normal, and for that reason no reduction is expected. He estimated that the field would flow for nine years more at the present rate of pressure decline.

John C. Schroeder of Danciger Oil Refining Company, speaking for East Texas independents, urged the commission not to reduce allowables below 20 barrels per well. He declared that this was as low a figure as would permit operation of leases owned by small independents. He complimented the commission on the effectiveness of its work, and pointed out that East Texas was the first field in which the workers had been able to settle and have comfortable homes.

No mention was made of the commission's proposal to repressure East Texas with salt water produced from the wells. Commissioner Terrell indicated that the commission had thought better of its decision to raise the question at this time. Company men conferred prior to the hearing and concluded that they did not care to introduce evidence now.

MAY CUT TEXAS

Commissioner notes the increase in storage

Austin.—Railroad Commissioner C. V. Terrell indicated last week that April allowables for Texas would be cut 80,000 barrels. His prediction was carried in a prepared statement which read as follows:

"Oil production in the United States during the week ending March 13 was 3,372,850 barrels per day. This was an increase of 85,050 barrels per day over the production of the week before.

"Gasoline stocks were 81,236,000 barrels—a gain of over 1,000,000 barrels since the previous week.

"Converted back into crude oil, this extra gasoline would be many millions above the current requirements.

"Storage of crude oil is increasing at the rate of 200,000 barrels per day, which indicates that current production is higher than the market demand.

"Texas produces 40 percent of the nation's crude. This would indicate that Texas is currently producing about 80,000 barrels too much oil per day."

NO DECISION YET

Whether anti-trust suit is to go to trial

Madison, Wis.—Decision as to whether 26 major oil companies, three trade journals and 71 individuals, for the most part officials of the companies, will have to stand trial on charges of conspiracy to violate the anti-trust laws was still to be made by Federal Judge Patrick T. Stone as the week closed.

Arguments on demurrers to two sets of indictments, returned by grand juries here last year, were heard by Judge Stone March 4 and 5. The charges grew out of alleged illegal operation of buying programs in the East Texas and Mid-Continent fields which the government charges were used to artificially raise gasoline prices and to "squeeze out" independent jobbers.

Pleas of innocent were entered here two weeks ago by 57 of the individual defendants, and had previously been entered on behalf of the corporations. Ten of the individual defendants are

Nominations for Texas Crude Oil for Six-Month Period

Form C-1

DISTRICT	Number Companies Reporting	April	May	June	July	August	September	ANALYSIS OF APRIL NOMINATIONS: Convert into Products	To Sell As Crude Oil	To Use As Heating Oil	INCREASE: April Over March	DECREASE: April Under March
1 Southwest Texas	14	25,901	25,908	25,904	25,903	25,907	25,903	15,051	10,850	.....	.....	34
2 Southwest Texas	11	64,382	65,557	66,932	68,307	69,682	71,057	13,825	50,557	.....	.....	1,771
3 Gulf Coast	19	251,561	254,221	256,881	259,341	261,781	264,241	140,866	110,445	250	1,383	.....
4 Southwest Texas	23	229,728	248,588	262,768	282,048	298,528	311,008	74,844	144,384	10,500	49,920	.....
5 East Central Texas	8	55,205	60,975	64,005	62,830	63,345	65,465	6,640	45,435	3,130	.....	302
6 East Texas—Outside of East Texas Field	10	76,502	67,649	68,849	69,049	69,249	69,449	37,470	39,032	.....	2,427	.....
6 East Texas Field	39	477,427	477,738	478,028	477,488	477,488	477,577	295,319	180,508	1,600	3,566	.....
7 West Central Texas	16	41,153	41,203	41,163	41,213	41,213	41,163	26,537	19,341	675	114	.....
7C West Central Texas	9	35,667	35,667	35,667	35,667	35,667	35,667	12,152	23,515	.....	447	.....
8 West Texas	20	236,172	237,372	238,472	239,572	240,722	241,422	142,421	93,451	300	10,185	.....
9 North Texas	13	63,506	64,056	64,107	64,158	64,214	64,215	29,505	34,001	.....	214	.....
10 Panhandle	13	78,815	78,515	78,515	78,815	78,815	78,815	63,415	15,400	.....	.....	361
Total all Districts	..	1,636,019	1,657,449	1,681,291	1,704,391	1,726,611	1,745,982	858,045	761,519	16,455	68,256	2,468
Net Increase all Districts April over March	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	65,788	.....

Compiled by Railroad Commission of Texas, Engineering Dept., Oil and Gas Division.

to be arraigned at a later date and four await removal hearings in their home districts.

Meanwhile, parties interested in the investigation here were informed of a report made public at Lansing, Michigan, last Saturday which exonerated major oil companies from allegations that they had violated anti-trust laws. Gordon E. Tappan, former assistant attorney-general assigned to an investigation authorized by the 1935 Michigan legislature, declared hearings had failed to develop any evidence of law violations.

It was following inauguration of the Michigan investigation, and a similar probe by a Wisconsin state body, that independent jobbers obtained the federal investigation which resulted in the indictments issued here.

No Cause for Proceedings

"I beg to report that I find no reason or just cause why either civil proceedings for injunctive relief or criminal proceedings should be taken," Tappan declared.

He recommended stronger conservation laws to prevent unrestrained production of crude oil, zoning legislation to regulate the construction of gasoline stations and a heavy license fee on both wholesale and retail operations so that "established but uneconomic" units could be eliminated. His report declares that the industry's chief trouble is too many retail outlets, with scant profits to many dealers and a "made race for gallonage."

Tappan was assigned to the committee when Harry S. Toy was attorney-general. His report was filed with Attorney-General Raymond W. Starr, who made it public without comment.

MADISON OIL CASE
Middlemen complain most, says Dickinson

Washington. — The outstanding accomplishment of the anti-trust division of the Department of Justice during the past year has been the pushing through to indictment of the oil cases at Madison, Wisconsin, members of the House Appropriations Committee were told during their recent hearings on the Justice Department appropriations bill by Assistant Attorney General John Dickinson, who has since resigned.

Most of the complaints against the oil industry come from independent middlemen rather than from consumers, Dickinson told the committee in discussing the general situation.

Generally, these complaints deal with alleged price fixing agreements between the oil companies, but Dickinson expressed the view that stabilization of prices does not necessarily involve a price agreement, although such a situation was found in the Madison case, "but might simply mean that all of these concerns realized that it was to their own interest not to cut prices in a place where, by refraining from cutting prices, they could get more profit. I mean, there is such a thing among business people as an unwillingness to engage in price wars or price cutting."

A.A.P.G. Meeting

RECENT PROGRESS AND FUTURE TRENDS STUDIED BY GEOLOGISTS

By W. E. GREEN, Staff Writer

Los Angeles. — The application of geophysical methods as an aid to the geologist in the search for new oil fields received more serious attention than ever before at the twenty-second annual meeting of the American Association of Petroleum Geologists, which closed a three-day session at Los Angeles March 19. More than 900 attendants registered and probably as many as 500 interested oil men, geologists and others attended many of the sessions without registering.

H. B. Fuqua New President

THE NEW PRESIDENT of the American Association of Petroleum Geologists was born at Duncan, Oklahoma, December 27, 1895, and majored in geology at the University of Oklahoma. He worked for several major concerns in Oklahoma and Texas and did consulting work prior to acceptance of a position as district geologist in North Texas with headquarters at Wichita Falls for Gulf Oil Corporation on February 6, 1922. On November 1, 1926, Fuqua was moved to Fort Worth to become assistant chief geologist for the Fort Worth Division. Two years later he became chief geologist of the division, with jurisdiction over North, West Central, West and Texas Panhandle regions. He is still in this position.

Fuqua shoots a good game of golf, and likes it along with football in preference to other sports. He derives pleasure in aiding beginners in the geological profession, and his judgment is good on geological, economic and general business matters.

—Reid Photo

H. B. FUQUA

A large number of geological papers were read during the three days of sessions, and the last three days of the week, which included Sunday, were given over to field trips, personally guided by California geologists who were more than anxious that their brothers from all parts of the United States see everything worth seeing.

There was no opposition to the men nominated to serve as new officers for the coming year. As a result the following were unanimously elected: H. B. Fuqua, Fort Worth, president; C. L. Moody, Shreveport, vice president; Ira H. Cram, Tulsa, secretary-treasurer; and Dr. W. A. Ver Wieve, Wichita, Kansas, bulletin editor.

Wallace Pratt created a lot of interest when he enlarged upon the fact that 55 percent of the oil discoveries in the United States during the period between 1931 and 1935 were accomplished by the application of geophysics, embracing various phases of siesmographic work. But he considered that such work only was a major aid to the geologist, in reaching more accurate conclusions. His paper is presented in full in this issue.

Drexel Dana of Bakersfield pointed out that the recent important new oil discoveries in California at Ten Section and Greeley, in addition to gas discoveries at Tracy and Rio Vista, were direct results of geophysical studies.

Another paper of interest was that of Joseph S. Irwin, who discussed the oil possibilities of Western Canada. "The Athabaska oil sands found in northern Alberta," he said, "constitute an immense oil reserve approximate comparable in availability to the oil shales of the United States." The speaker said that Canada imports about six million dollars worth of petroleum products from the United States annually.

Dr. Stanley Herold, Los Angeles consulting geologist, who in recent years visited Soviet Russia, doubted very much if the oil produced and to be produced in U.S.S.R. will ever become a menace.

"Although it costs the Russian government almost nothing to produce oil, and although the Russian supply is enormous, Soviet Governmental agencies are just as greedy as any others and are not selling oil on the world market any cheaper than private companies are selling it," said Dr. Herold.

"There is a further reason for discrediting the threat of cheap Russian oil overflowing the United States," he continued. "Russian drilling and production methods are inefficient, largely because of the inability to get good steel for oil machinery.

"The Soviet has not succeeded in attaining mass production of first class steel."

The art of prospecting for new

sources of petroleum supply was the topic of E. DeGolyer, who declared that the exploratory branch should be established as an independent department and not as a part of either the producing or drilling divisions. Some of the advantages he listed as following such organization were: more effective results following the placing of definite responsibility; the development of cost accounting for oil finding; and development of definite drilling equipment and technique for exploration work.

Dr. L. W. Blau pointed out the difficulties confronting the interpretation of physical effects as reflected in geophysical data in terms of geologic causes. He took the position that geophysical data must be worked up independently. A competent geophysicist-geologist may combine geophysical and geologic information in the preparation of a report which will then, and only when this procedure is followed, include all present knowledge of the area under investigation.

Because sand is much less compactible than clay, thick lenses of sand surrounded by shale, when buried under a load of later sediments, are marked by low anticlinal bulges, declared John L. Rich in discussing the application of the principle of differential setting of the tracting of lenticular sand bodies. This principle has been used successfully in Kansas. Extremely detailed structural mapping is necessary, however, to reveal these bulges, and they cannot always be distinguished from similar structures produced by other causes. Elimination of regional dip is a valuable aid in interpretation.

Dr. E. D. Lynton discussed the development of the magnetic polarity system for laboratory orientation of well cores. This is accomplished by identifying the north and south sides of a rotary core, after it has been brought to the surface, through residual magnetic polarity in the heavy minerals of the rock.

The most important geological factors that affect acidizing are the chemical composition of the producing formation, porosity and permeability, stratigraphy, structure and physical characteristics of the producing formation. The effect of each of these factors were discussed by P. E. Fitzgerald and W. Wray Love, who also outlined means of avoiding certain difficulties that may arise.

The latest developments in aerial photographic mapping was described by W. L. Cozzens.

The interrelationship of geology and geophysics was the subject of O. L. Brace. He stated geology serves as an indispensable guide to every step of geophysical activity, and without such guidance the geophysicist cannot hope to reach his objective. Lack of coordination between the two technical branches has led, he stated, to much misinterpretation of geophysics, and continued future success will depend upon a greater degree of cooperation in preparing the background for geophysical prospecting and in interpreting the results obtained by such methods.

Study Local Geology

Various geological conditions in different fields and localities of the United States were discussed by the following men: James M. Kirby; Alex Clark; Frank Rieber; Joseph Neely; Ross L. Heaton; Warren O. Thompson and Harry W. Oborne; John G. Bartram; N. Wood Bass; E. O. Markham and L. C. Lamar; E. G. Thompson; Herschel H. Cooper; E. Russell Lloyd; George S. Buchanan; Max Bornhauser; J. Brian Eby and M. T. Halbouty; Charles E. Weaver; J. Marvin Weller and Alfred H. Bell; Donald C. Barton; B. W. Blanpied and Roy T. Hazzard; B. W. Blanpied; Francis Shepard; Bruce L. Clark; E. A. Koester; S. Grinsfelder and W. S. Eggleston; Arthur S. Huey; Frank M. Anderson; Kenneth Dale Owen; E. S. Shaw; and Bruce H. Harlton.

A symposium on recent developments in the various districts of the United States was held. The new discoveries during 1936 were the principal discussions during this meeting. The following men covered different parts of the nation: Marvin Lee and George Baughman; A. E. Brainerd and Charles S. Lavington; Frederick A. Bush; M. G. Edwards; Berte R. Haigh and Hal P. Bybee; Harry H. Nowlan; A. W. Weeks; O. L. Brace; Wallace Ralston; and Dwight H. Bingham. W. B. Heroy discussed developments in foreign countries.

Good Attendance

The American Association of Petroleum Geologists in one of its general sessions at Los Angeles.

Geophysicists Meet

ELECT J. C. KARCHER HEAD; STUDY SCIENTIFIC SUBJECTS

Los Angeles.—The Society of Exploration Geophysicists closed its seventh annual meeting at Los Angeles March 18 by the selection of Dr. J. C. Karcher, president of Geophysical Service, Inc., Dallas, as president, and by selecting Dr. F. M. Kannenstein of Independent Exploration Company of Houston as vice president. Miss M. E. Stiles of Independent Exploration Company was elected secretary-treasurer. Dr. M. M. Slatnick is the next editor of Geophysics, journal of the Society of Exploration Geophysicists. Dr. Slatnick is with Humble Oil & Refining Company.

Pratt and Garrett Honored

The society elected Wallace E. Pratt, vice president and director of Humble Oil & Refining Company, and L. P. Garrett of Gulf Oil Corporation to honorary membership in recognition of their interest in and promotion of geophysics.

At this meeting some papers of outstanding scientific interest were presented. Dr. E. D. Lynton spoke on the laboratory orientation of well cores by their magnetic polarity, and Dr. Hassler discussed a new spectrographic analysis of water samples and cores for purposes of determining the intrusion into wells of water and for correlation between wells.

Dr. A. B. Bryan delivered a most interesting paper on the gravity meter. This instrument has gained great prominence in geophysical prospecting in the past few years due to the rapidity of measurement and the almost uncanny accuracy of gravity determinations made possible by its use.

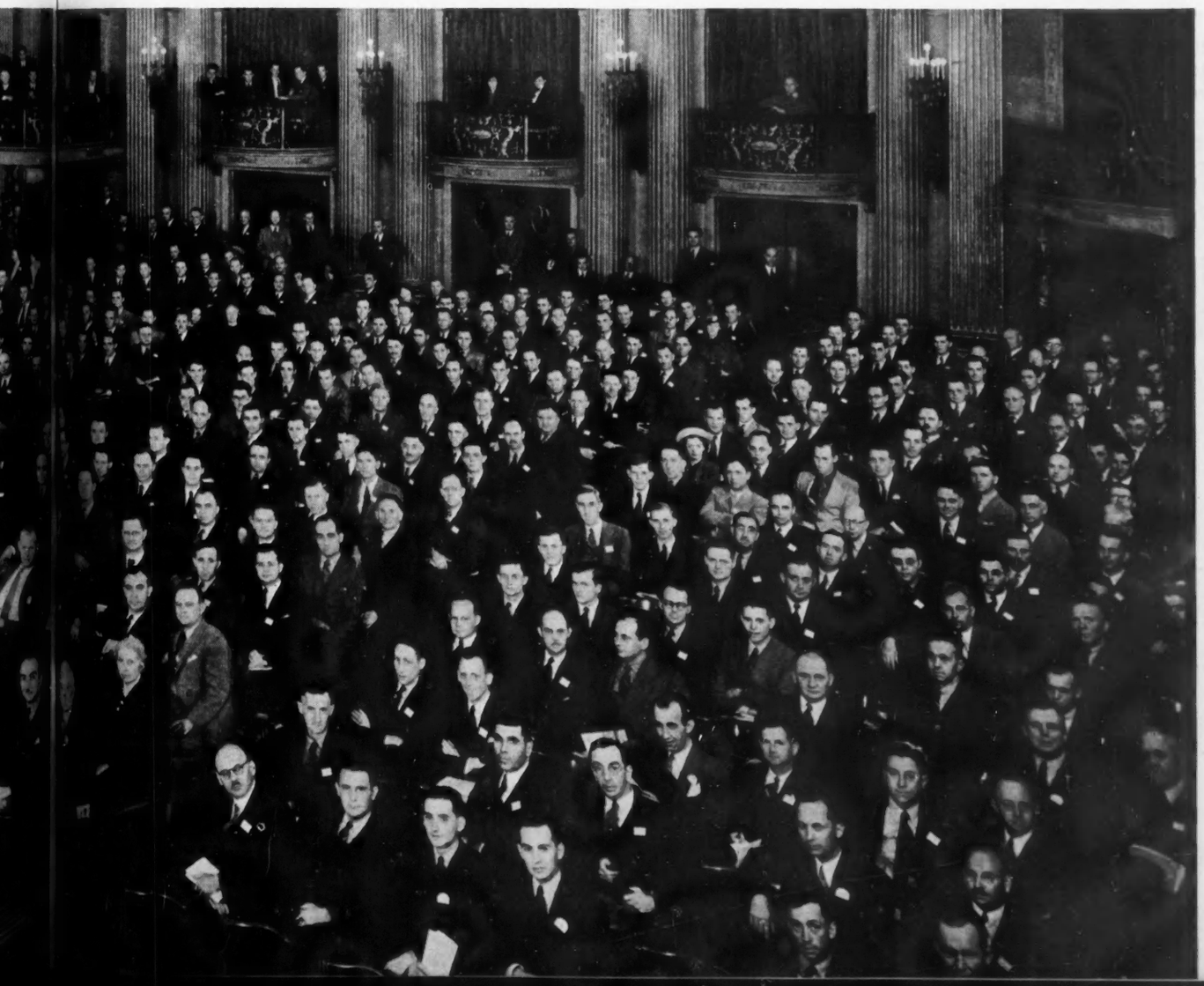
F. T. Boucher spoke on the development of the gravity pendulum for prospecting, discussing the adverse factors which so often vitiate pendulum measurements. Although the gravity meter has displaced the pendulum in exploration work, it is nevertheless of great importance to pure geophysics to be informed of Boucher's development of the gravity pendulum, especially in view of the fact that his accuracy was better than one part in ten million of gravity, which far exceeds the most accurate gravity determinations ever made by physicists in the laboratory.

Alexander Deussen delivered an interesting paper on the use of temperature measurements in drill holes for cementation control and correlation. The measurements described by him render possible correlation of strata between drill holes which are cased. Up until the present time it has been impossible to obtain any measurements usable for correlation in such cased holes, because electrical measurements in such holes have not up to the present time been possible.

Drs. Mott Smith, Sharpe, Washburn, Scherbatsoy, Hare, and Messrs. Salvatori and Johnson discussed various interesting phases of seismic prospecting.

Dr. Beno Gutenberg of the California Institute of Technology spoke on geophysics as a science. He showed that the realm of geophysics is so broad, including as it does meteorology, cosmology and all applications of physics to the earth as a whole or in part, that no one human being can be expected to master the whole subject. He mentioned the fact that there are no schools of geophysics in the United States. Thus in some universities geophysics is taught in the department of geology, or in the department of physics, and not, as would be more proper, as an independent subject.

Marion Gilmore spoke on earthquake investigations. He reported that there are over 30,000 earthquakes which do visible damage each year. He described various seismographs, tilt meters, and other seismological instruments, and expressed the hope that it may be possible by further research to predict earthquakes at some future time.



Excess Production

By L. J. LOGAN,

MARKETS show adverse effects of additions to stocks since beginning of year, under less strict control of crude output. Texas is largely responsible for nation's excess, as evidenced by increasing stocks in the state.

UNSTEADINESS in the markets for refined oils in recent weeks apparently has resulted largely from less favorable trends in the above-ground stocks of crude oil and products.

Although petroleum consumption lately has been the greatest in history, it has not been large enough to absorb all of the nation's crude oil production, which has been expanded, similarly, to all-time record proportions. Substantial quantities of crude and refined oils consequently have been going into storage since the beginning of this year.

Storage Withdrawals Interrupted

January brought a turning point in the fluctuations of storage. The total stocks of all oils in the country hit a 13-year low mark on December 31, 1936, following seldom-interrupted withdrawals for 6½ years. But the trend was reversed in January, and at the end of that month the inventories showed an increase. In February and March there have been further additions to stocks.

These additions to storage naturally have had an unsettling effect on the markets, and have been at least partially responsible for wavering of prices of refined products in recent weeks.

Accompanying tables furnish the proof that the supplies of oil have been permitted to exeed market requirements, and the recent market trends testify that this failure to balance supply with demand has adversely affected prices.

Obviously, the present situation is one calling for caution henceforth with regard to stocks; for efforts by the industry toward holding the favorable inventory position that has been gained through years of self-restraint.

End-of-Month Stocks of All Oils in the United States in Past Year

(Barrels of 42 Gallons)

End of Month	Crude Oil	Natural Gasoline	Refined Products	Total, All Oils	Days' Supply
December, 1935	314,855,000	3,698,000	223,361,000	541,914,000	178
January, 1936	313,081,000	3,936,000	224,318,000	541,335,000	174
February	310,812,000	4,218,000	228,214,000	543,244,000	179
March	313,189,000	4,553,000	231,063,000	548,805,000	183
April	315,389,000	5,058,000	230,672,000	551,119,000	171
May	315,169,000	5,664,000	233,590,000	554,423,000	173
June	311,046,000	5,829,000	233,421,000	550,296,000	161
July	306,390,000	5,846,000	233,262,000	545,498,000	161
August	301,757,000	5,653,000	234,756,000	542,166,000	157
September	295,693,000	4,945,000	231,842,000	532,480,000	146
October	292,271,000	4,555,000	230,605,000	527,431,000	148
November	288,998,000	4,153,000	229,122,000	522,273,000	149
December, 1936	288,184,000	4,055,000	226,407,000	518,646,000	146
January, 1937	286,759,000	4,032,000	229,340,000	520,131,000	155

The increasing stocks represent a danger signal that cannot be safely ignored.

Storage Gains Not Alarming

At the same time, however, there is not yet justification for serious alarm over the rising stocks and the liberalized crude control which is permitting the additions to storage.

The storage has been increasing only for a comparatively short period, and since consumption is expected to reach new record proportions this spring and summer, it would be relatively easy to restore the balance between demand and supply. The half dozen leading producing states, cooperating, could bring about this balance even while permitting production to increase; simply by putting a brake on the production rise to the extent of allowing demand to catch up with the output of the wells.

The present increasing stocks appear only moderately disturbing, moreover, because of the exception-

United States Stock of Crude Oil Show Steady Increase in Past Six Weeks, Under Influence of Higher State Allowables

Table below shows fluctuations by grades by weeks. Figures are from Bureau of Mines, and indicate barrels of 42 gallons.

GRADE OF CRUDE OIL	January 23	January 30	February 6	February 13	February 20	February 27	March 6	Change in Six Weeks
Pennsylvania Grade	4,111,000	4,136,000	4,104,000	4,123,000	4,107,000	4,055,000	4,049,000	— 62,000
Other Appalachian	795,000	801,000	819,000	875,000	906,000	882,000	877,000	+ 82,000
Lime-N. E. Indiana-Michigan	803,000	778,000	789,000	815,000	809,000	851,000	882,000	+ 79,000
Illinois-S. W. Indiana	9,583,000	9,608,000	9,625,000	9,599,000	9,541,000	9,570,000	9,637,000	+ 54,000
North Louisiana and Arkansas	10,459,000	10,444,000	10,683,000	10,608,000	10,496,000	10,255,000	10,222,000	— 237,000
West Texas and S. E. New Mexico	28,034,000	27,507,000	27,796,000	28,198,000	28,160,000	28,397,000	28,462,000	+ 428,000
East Texas	18,989,000	20,047,000	20,120,000	20,657,000	21,267,000	21,814,000	21,758,000	+2,769,000
Other Mid-Continent	113,928,000	114,382,000	113,921,000	113,777,000	114,579,000	114,055,000	115,305,000	+1,377,000
Gulf Coast	24,044,000	23,617,000	24,013,000	23,556,000	23,948,000	24,384,000	24,488,000	+ 444,000
Rocky Mountain	25,883,000	25,904,000	25,844,000	25,854,000	25,880,000	25,899,000	25,869,000	— 14,000
California	29,608,000	29,365,000	29,630,000	29,324,000	29,161,000	29,265,000	29,204,000	— 404,000
Foreign	1,874,000	1,645,000	1,572,000	1,522,000	1,420,000	1,334,000	1,408,000	— 466,000
Total reported weekly	268,111,000	268,234,000	268,916,000	268,908,000	270,274,000	270,771,000	272,161,000	+4,050,000
Estimates of unreported stocks	17,100,000	17,150,000	17,200,000	17,250,000	17,300,000	17,350,000	17,450,000	+ 350,000
Total stocks	285,211,000	285,384,000	286,116,000	286,158,000	287,574,000	288,121,000	289,611,000	+4,400,000

Increases Storage

Associated Editor

TEXAS' future allowable will largely determine whether or not supply will be brought back in balance with demand. Restoration of such balance needed to preserve the favorable inventory gained in recent years.

End-of-Year Stocks of All Oils, Showing Fluctuations Since 1918

Total storage was reduced 23,054,000 barrels in 1936, reaching the lowest level for nearly 13 years. The storage December 31, 1936, was the smallest since March 31, 1924. Expressed in days' supply, the December 31, 1936, inventories were the smallest for 16 years, or since November, 1920. In January, 1937, however, the long-sustained withdrawals from storage were arrested, and the stocks subsequently have been increasing.

YEAR	BARRELS				Days' Supply
	Crude Oil	Natural Gasoline	Refined Products	Total Stocks, All Oils	
1918	.....	.....	.....	193,411,000	165
1919	.....	.....	.....	200,383,000	164
1920	.....	.....	.....	209,845,000	156
1921	.....	.....	.....	294,428,000	203
1922	.....	.....	.....	385,349,000	239
1923	.....	.....	.....	492,088,000	235
1924	.....	.....	.....	520,287,000	236
1925	.....	.....	.....	552,464,000	239
1926	.....	.....	.....	527,084,000	210
1927	.....	.....	.....	597,176,000	231
1928	.....	.....	.....	621,010,000	223
1929	.....	.....	.....	†689,497,000	228
1930	411,882,000	3,100,000	251,680,000	666,662,000	224
1931	370,194,000	2,825,000	258,879,000	631,898,000	221
1932	339,875,000	3,203,000	249,116,000	592,194,000	230
1933	354,223,000	3,680,000	244,295,000	602,198,000	226
1934	337,254,000	3,740,000	223,356,000	564,350,000	199
1935	314,631,000	3,698,000	223,371,000	541,700,000	166
1936	288,184,000	4,055,000	226,407,000	518,646,000	146
1937 (January)	286,759,000	4,032,000	229,340,000	520,131,000	155

† The stocks continued rising in first five months of 1930, reaching a peak of 700,808,000 barrels, May 31, 1930.

ally low level to which they were reduced before the additions of recent weeks commenced.

The stocks of all oils on hand in the United States had declined by December 31, 1936, to 518,646,000 barrels, the smallest total for nearly 13 years, or since March 31, 1924. Expressed in days' supply at the prevailing rate of consumption, the inventories of December 31, 1936 (146 days' supply) were the smallest for 16 years, or since November, 1920.

The inventories of all oils at the end of 1936 showed a decrease of 182,162,000 barrels, or 26 percent, from the peak of 6½ years before, when the total stood at 700,808,000 barrels, as of May 31, 1930.

From the 13-year low mark of 518,646,000 barrels that was reached at the end of December, 1936, the nation's stocks of all oils had increased only 1,485,000 barrels by January 31, 1937, although further additions to storage of both crude and refined oils are indicated for February and March.

The January 31 total of 520,131,000 barrels is the latest official figure available on the stocks of all oils. But weekly reports of the Bureau of Mines indicate that crude stocks were increased more than 4,000,000 barrels between January 30 and March 6. Similarly, American Petroleum Institute weekly reports indicate that total gasoline stocks were increased 11,696,000 barrels between January 30 and March 13; while gas oil and fuel oil stocks were reduced 3,114,000 barrels. These figures indicate substantial increases in the stocks of all oils in February and March.

Higher Allowables Expand Stocks

These additions to storage this year, following the reaching of the low mark at the end of 1936, have resulted from the liberalizing of crude production allowables in some of the leading producing states. An accompanying table shows that the states in recent months have been drifting farther and farther away from the Bureau of Mines recommendations in fixing allowables.

Even in January the state allowables were high enough to result in additions to the total stocks of all oils, as previously indicated. Yet on February 1 the six leading states inaugurated even more liberal state allowables, exceeding the Bureau of Mines recommendations 148,296 barrels daily, or 5.2 percent, compared with an aggregate excess of 111,481

[*Continued on page 68*]

State crude production allowables in recent months show less strict adherence to Bureau of Mines recommendations.

(Barrels Daily)

MONTH AND STATE	Bureau of Mines Recommendation	*State Allowable At Beginning of Month	Excess of State Allowable	Percent Excess
January, 1937:				
California	559,900	†551,000	‡8,900	‡1.6
Kansas	165,600	175,851	10,251	6.2
Louisiana	216,300	240,650	24,350	11.3
New Mexico	79,800	92,800	13,000	16.3
Oklahoma	573,100	573,100	.....	.....
Texas	1,176,000	1,248,780	72,780	6.2
Total six States	2,770,700	2,882,181	111,481	4.0
February, 1937:				
California	573,300	†551,000	‡22,300	‡4.0
Kansas	170,000	187,918	17,918	10.6
Louisiana	225,100	235,700	10,600	4.7
New Mexico	81,600	97,600	16,000	19.6
Oklahoma	581,900	581,900	.....	.....
Texas	1,203,400	1,329,478	126,078	10.5
Total six States	2,835,300	2,983,596	148,296	5.2
March, 1937:				
California	570,900	†551,000	‡19,900	‡3.6
Kansas	178,000	186,968	8,968	5.0
Louisiana	240,000	236,000	‡4,000	‡1.7
New Mexico	88,200	103,200	15,000	17.0
Oklahoma	590,700	620,460	29,760	5.0
Texas	1,256,600	1,398,514	141,914	11.3
Total six States	2,924,400	3,096,142	171,742	5.8

* Allowable indicates daily average for month in California, Kansas, Louisiana, New Mexico, and Oklahoma; except that Rodessa, Louisiana, field allowable increases with completion of new wells; and New Mexico sometimes is revised at middle of month. In Texas, the allowable is as of the first day of the month, and gradually increases as new wells are completed.

† Recommendation of Central Committee of California Oil Producers.

‡ State allowable below Bureau of Mines allocation.

Discovery Rates

By WALLACE E. PRATT, Vice President,

Presented before the Twenty-
American Association of
Los Angeles from

ON SEVERAL occasions during the past 15 years committees in the petroleum industry have deliberated on the question of the adequacy of the reserves of petroleum remaining unmined at the time, as against our probable future needs. Such committee have commonly realized that a factor more important for their purposes than the volume of the known or proven reserves is the volume of oil that may be added to the known reserves through future discoveries. Yet, because of the paucity of evidence bearing on discovery probabilities, reports on studies of this character have omitted any quantitative estimate for future discoveries. Quite generally investigators have voiced the secure belief that additional discoveries would be forthcoming in requisite number, but they have uniformly failed to support their belief with convincing proof. I have examined the record of past discoveries in the hope that in it some trend or other characteristic might be identified which could be brought to bear directly on the problem of gauging future discoveries. This inquiry has afforded no secure criterion for the estimation of the volume of future discoveries, but it has thrown a revealing light on the character and the accomplishment of this discovery effort up to the present.

More than 30 billion barrels of oil had been discovered in the United States up to the end of the year 1935. This figure represents the amount already produced plus that still present in known, proven natural reservoirs, underground. In the latter category, our underground reserves, there are estimated to be some 13 billion barrels. Roughly, nine-tenths of this total volume was found in the last 35 years of the period. The American experience over this period is analyzed by five-year periods in Table 1, which was compiled by John V. Boyce, and originally presented in slightly different form in a paper I read in May, 1935, before the Chamber of Commerce of the United States at Washington, D. C.

Discovery Rate Now Lower

Table 1 fixes the discovery of the reserves in each important field as of the year during which the first commercially successful oil well was completed. The whole reserve at Kettleman Hills, for example, is credited to the year 1928, East Texas to the year 1930, and Conroe to the year 1931. In a small number of poorly defined producing areas, such as Archer County, Texas, the extensions for each year are credited to the year in which they develop.

Perhaps the most arresting feature of this record of the progress of discovery is the fact that 40 percent of all our oil was discovered within a period of only five years, 1926-30. More than one-half the total was found within ten years, 1921-30. A generally accelerated rate of discovery is revealed for the United States at large, and for each of the three most important producing states, throughout the first three decades of the period under review. In each case the rate of discovery reaches a conspicuous peak in the period 1926-1930 and falls abruptly thereafter. Through the years oil-finding appears to have become more fruitful of results, measured in barrels of reserves discovered until it attained a maximum some six or eight years ago; thereafter its accomplishment failed suddenly and in marked degree.

It may be questioned whether the volume of reserves discovered constitutes a really significant measure of the success of oil-finding. The task of discovering a small oil field is at least as difficult as the task of discovering a large one, and the discovery of a single large field may distort intolerably the record of barrels found.

The discovery of the East Texas Field, for example, is equivalent to the discovery of some 30 major oil fields, if only the volume of reserves in barrels is considered. Perhaps a better index of success in discovery effort would be, therefore, the number of new oil fields found rather than the number of barrels of reserves found.

Decrease in Number of Finds

Table 2 shows the number of major oil fields found since 1900 (through 1935) in the United States as a whole and in each of the important producing states, California, Oklahoma, and Texas. For the purposes of this compilation a major oil field is defined as one whose ultimate reserves are estimated at more than twenty million barrels. That is to say, any field large enough to supply the present national requirements for one week, or more, is classed as a major oil field. Nearly 200 such fields are included in the table. Their average

TABLE 1

Average Annual Discoveries by Successive Five-Year Periods in the United States as a Whole and in the Important Producing States, California, Oklahoma and Texas.

PERIOD	CALIFORNIA		OKLAHOMA		TEXAS		UNITED STATES	
	Millions of Barrels	Percent	Millions of Barrels	Percent	Millions of Barrels	Percent	Millions of Barrels	Percent
1901-1905	35	0.6	135	3.4	55	1.0	345	6.3
1906-1910	110	2.0	65	1.1	2	....	300	5.4
1911-1915	45	0.8	180	3.3	105	1.9	435	7.9
1916-1920	185	3.4	140	2.5	110	2.0	660	12.0
1921-1925	305	5.5	90	1.6	210	3.8	875	15.9
1926-1930	435	7.9	290	5.3	1,225	22.3	2,165	39.4
1931-1935	25	0.5	100	1.8	395	7.2	725	13.2
	...	20.8	...	18.2	...	38.3	.....	100.0

In Oil-Finding

Humble Oil & Refining Company, Houston

Second Annual Meeting of the
Petroleum Geologists in
March 17-19, 1937

size is more than 100 million barrels and collectively they account for nearly 80 percent of all the oil discovered in the United States during the period.

The curve of discovery for oil fields, as indicated in Table 2 takes on the same character as the curve of discovery for oil reserves shown in Table 1, namely, a gradual rise through successive five-year periods to a conspicuous peak in the half decade, 1926-1930, followed by a sharp drop at the end. The experience in the three most important producing states duplicates that of the nation at large in this respect, leaving little doubt that, whatever may be the explanation, oil-finding in the United States really passed through a maximum of accomplishment in the late 1920's.

Before inquiring into possible explanations of the character of the discovery record, it may be pertinent to ask how the industry has gone about its job of finding oil in the past. What particular method of exploration led to the discovery in each case? Perry Olcott has assisted me in a study of this problem, the results of which are shown in Table 3.

Geology Leads in Strikes

The several categories of discovery methods in Table 3 require brief explanation. Column 1 is made up of the fields discovered by random drilling; that is, pure "wildcatting," with no logical basis to justify it. Column 2 contains all discoveries that have resulted from wells drilled on such obvious indications as oil and gas seepages at the surface or in shallow wells, and on less direct evidences such as general trends, mounds over salt domes, or other points of uplift on constructional surfaces, paraffin dirt, and mineralized springs. No discovery of this character has been credited to geology in Table 3, yet it is difficult to eliminate all geologic inference from the considerations that must have influenced the sponsors of these exploratory enterprises. In other words, it would be easy and perhaps logical to credit geology with some of these discoveries. Column 3, geological discoveries, consists of all discoveries which resulted from geologic exploration, either surface or subsurface studies, including core drilling. Column 4 is the list of geophysical discoveries, some of which, of course were guided in part by geological studies. Column 5 shows discoveries resulting from deeper drilling in old fields. Such exploration, again, is often guided by geological studies, at least in part.

Table 3 may not be absolutely accurate in its classification by methods of discovery. Another inquirer might arrive at a slightly different result, but it is believed that the general trends would remain.

In comment on Table 3, it may be observed that strictly geological studies are responsible for the discovery of nearly 50 percent of the major oil fields found in the United States during the past 35 years, and that pure "wildcatting" has yielded only 17 percent of the total harvest of major oil fields. Only 19 percent of our major fields have manifested themselves at the surface with sufficient clarity to be identifiable except by an expert. If the effort we have put forth had depended solely on luck and obvious evidences, therefore, we would have found only 36 percent of the major oil fields we have found over this 35-year period.

Methods of Finding Changing

For the last 10 years the situation in this respect is even more striking. Our discoveries for the last 10 years number 100 major oil fields, more than the number discovered in the preceding 25 years. But only 4.6 percent of these resulted from obvious evidences, and only 10 percent were due to the random-drilling type of wildcatting. Geological studies maintain their overall record of discovering 50 percent of our major oil fields, and geophysical exploration, closely akin to geologic exploration, is responsible for 28 percent of the major oil fields found during the last decade. If the results of geology and geophysics are combined, they include 78 percent of our finding accomplishment during the last 10 years. Obvious surface evidences and random drilling together have revealed to us only 16 major oil fields (16 percent of the total) within the past 10 years; less than half their previous contribution.

Perhaps more significant than the relative accomplishment of each method of exploration is their varying effectiveness with

TABLE 2

Major Fields Discovered in the United States at Large and in the Important Producing States, California, Oklahoma and Texas, by Five-Year Periods.

PERIOD	CALIFORNIA		OKLAHOMA		TEXAS		UNITED STATES	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1901-1905	1	0.5	3	1.5	5	2.5	10	5.0
1906-1910	2	1.0	1	0.5	. . .	. . .	5	2.5
1911-1915	1	0.5	5	2.5	7	3.6	18	9.2
1916-1920	4	2.0	5	2.5	5	2.5	23	11.7
1921-1925	8	4.1	6	3.1	15	7.7	40	20.4
1926-1930	11	5.7	12	6.2	24	12.2	59	30.4
1931-1935	4	2.0	6	3.1	15	7.7	41	20.8
Total	31	15.8	38	19.4	71	36.2	196	100.0

TABLE 3
Major Oil Fields Discovered in the United States, Over Successive Five-Year Periods, Classified as to Method of Discovery.

PERIOD	(1)		(2)		(3)		(4)		(5)		(6)	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
1901–1905	2	20.0	7	70.0	1	10.0	..	0.0	..	0.0	10	100
1906–1910	2	40.0	2	40.0	1	20.0	..	0.0	..	0.0	5	100
1911–1915	3	16.7	8	44.5	7	38.9	..	0.0	..	0.0	18	100
1916–1920	1	4.3	4	17.4	17	73.9	..	0.0	1	4.3	23	100
1921–1925	13	32.5	10	25.0	17	42.5	..	0.0	..	0.0	40	100
1926–1930	5	8.5	5.5	9.3	37	62.7	5.5	9.3	6	10.2	59	100
1931–1935	5	12.2	..	0.0	12.5	30.5	22.5	55.0	1	2.4	41	100
Total	31	15.8	36.5	18.6	92.5	47.3	28.0	14.3	8	4.1	196	100

(1)Discoveries resulting from purely random drilling.
(2)Discoveries resulting from obvious evidences.
(3)Discoveries resulting from geological investigations.
(4)Discoveries resulting from geophysical investigations.
(5)Discoveries resulting from drilling deeper in territory already producing in shallow sands.
(6)Total discoveries since 1900 by five-year periods.

the passage of time throughout the period under review. Random drilling was important early, accounting for 30 percent of the discoveries in the first decade of the period under review. It attained its greatest effectiveness in the half decade, 1921-1925, with a record of 13 major oil fields in 5 years, 2.6 oil fields per year, equivalent to one-third of the total number found. Drilling on obvious evidences was important in the early part of the period, also, yielding us 70 percent of our discoveries in the first half-decade, 1901-1905. Thereafter it continued to furnish a large proportion of our major oil fields each decade until the last when, as stated already, its contribution fell to 4.6 percent. Geological exploration, on the other hand, made little contribution to the accomplishment of the first decade and did not reach its maximum effectiveness until the period 1926-1930, during which it was responsible for the discovery of 37 major oil fields, an average of more than 7 per year. Over the last five years its accomplishment has been sharply reduced to 12.5 major fields for the period, a rate lower than any it had shown since the 1911-1915 period. Finally, geophysics only got started within the last decade, having no discovery to its credit previously. Nevertheless, for the last half-decade it has established a record of 22.5 discoveries of major oil fields, 55 percent of the total accomplishment.

Trend Not Likely to Change

Possibly the tendencies suggested by Table 3 are not valid. Perhaps we shall again make a large proportion of our discoveries of major oil fields by random drilling or by drilling on or near obvious evidences of the presence of oil. Perhaps we shall again find as many as seven major oil fields per year over a five-year period by geological exploration. But these possibilities seem unlikely. Most of the obvious oil fields appear to have been found, and the number of wildcat wells drilled at random has fallen off in recent years. Our geological discoveries are definitely fewer in number and constitute a smaller proportion of the total discoveries over the last five years. Only geophysics continues to maintain its accomplishment. All of the older methods combined have yielded us only 19 major oil fields in the last five years, a number smaller than the achievement of these methods for any similar period since 1915.

A rough gauge of efficiency in oil-finding is the number of dry holes drilled per major discovery. If our only method of exploration were random drilling of wildcat wells this index would be more significant. Our recently improved methods of exploration in advance of drilling have enabled us to reduce the number of dry holes drilled per discovery. Over the nation at large we have drilled about one thousand dry holes for each major oil field we have found up to the end of 1935. But in recent years this ratio has fallen markedly, until during the last five years it has averaged only 500 dry holes per major discovery.

In discussions of the stability of the producing industry, the suggestion that we could well do with a smaller volume of oil in proven reserve is often advanced. Those who feel secure in our ability always to find more oil when we need it believe the present reserves to be excessive and burdensome. Considered merely as an inventory our reserves are undoubtedly heavy. No one likes to carry in stock all the raw material he expects to use over the next ten or fifteen years. But as a true reserve, to be drawn on only as needed, our underground storage constitutes no burden, and is not too large.

Need Present Reserves

Another aspect of our reserves, apart from their adequacy as a supply for a certain number of years, has recently come to be realized. If oil is to be produced efficiently, that is, if recovery is to be reasonably complete and unit cost low, it must be produced at a rate slower than we have been accustomed to in the past. The optimum rate of production for a given pool depends, among other factors, upon the size of the reserve. The rate of production necessary to meet our national needs has risen to a point where our present reserves are barely large enough to permit efficient production at the required rate. This fact is coming to be recognized despite our current ability to produce, temporarily, in excess of market demand. Some of our production is simply maintained at a wastefully high rate. This consideration makes it desirable to maintain our reserves at something like their present volume even though we could do with smaller reserves, so far as other purposes are concerned. We need about our present reserve to permit efficient production at our present rate of consumption.

Drop Not Due to Depression

An economist would be tempted to explain the abrupt drop in discovery subsequent to 1930 as a result of the economic and industrial depression which began at the end of 1929. As a matter of fact, many of those with whom I have discussed the record in recent years have seized immediately upon this explanation, once they have accepted the record itself. Without doubt the depression slowed up exploratory work, and so tended to retard discovery. But 1935 was not a depression year so far as exploration was concerned; it could hardly have been more active. Yet discoveries for 1935 are not large compared to the average discoveries from 1926 to 1930,

[*Continued on page 53*]

U. S. Reserves

ESTIMATED AT 13 BILLION BY A. P. I. COMMITTEE

New York.—Proven oil reserves of the United States on January 1, 1937, are estimated at 13,063,000,000 barrels, according to a report submitted March 15 to the board of directors of the American Petroleum Institute by the Institute's Committee on Petroleum Reserves. This is an increase of 886,000,000 barrels over the estimate of these reserves as of January 1, 1935. During this two-year period the committee calculates that 2,044,000,000 barrels were produced; but discoveries of new pools and development of old ones have covered this and added 886,000,000 barrels to proved reserves.

Figures Conservative

Further, the committee says that its latest calculation of reserves is so conservative that it will probably have to be revised upward as further developments take place. That was what happened two years ago, when the estimate as of January 1, 1935, placed proven reserves at 12,177,000,000 barrels. Later the figure was raised to 13,632,000,000 barrels when more complete data on new discoveries became available.

Commenting on the report, President Axtell J. Byles, of the Institute, said the estimate must be understood to deal only with "known and proven" reserves.

"It takes no account of possible—indeed, certain—future discoveries," he explained. "The figures do not mean that the country has available only 13,063,000,000 barrels of oil, but that it has proved reserves up to that amount. The Chicago wheat pit estimates of 'visible supply' of wheat do not include calculations of next year's crop; and likewise these petroleum estimates take no account of future findings of oil. They are calculations of what we *know* we have."

The committee pointed out that it considered all available data on production and discoveries in 1935 and 1936 and had studied carefully the record of developments during those years. Estimates of reserves by states, as of January 1, 1937, gave Texas 6,422,000,000 barrels; California 2,956,000,000 barrels; Oklahoma 1,141,000,000 barrels; the Rocky Mountain states—Wyoming, Montana and Colorado—346,000,000 barrels; Kansas 568,000,000 barrels; Louisiana 524,000,000 barrels; New Mexico 471,000,000 barrels; Arkansas 84,000,000 barrels; and the eastern states—Pennsylvania, West Virginia, Ohio, New York, Michigan, Kentucky, Indiana and Illinois—551,000,000 barrels; making a total of 13,063,000,000 barrels.

Compiled by Committee

J. Edgar Pew, of Sun Oil Company, Philadelphia, Pa., chairman of the Committee on Petroleum Reserves, said he believed in view of the thorough assembly of data, and of the cooperation the committee had received from many petroleum geologists and engineers, the report was the most accurate presentation that had ever been made on the matter of reserves. Other members of the committee are: Wallace E. Pratt, Humble Oil & Refining Company, Houston, Texas; W. B. Heroy, Consolidated Oil Corporation, New York; G. Clark Gester, Standard Oil Company of California, San Francisco, Calif.; R. F. Baker, The Texas Company, New York; Frank Clark, The Ohio Oil Company, Tulsa, Okla.; Fred E. Wood, Standard Oil Company (Indiana), Chicago; and F. H. Lahee, Sun Oil Company, Dallas, Texas.

The complete report follows:

The American Petroleum Institute Committee on Petroleum Reserves respectfully submits herewith a table entitled "Proven Petroleum Reserves of the United States," in which are shown (A) estimates of proven oil reserves on January 1, 1935, made by the American Petroleum Institute Committee on Production (sub-committee on Known Reserves) in October, 1935; (B) estimates of proven oil reserves on January 1, 1935, revised in February, 1937, by the present committee; and (C) estimates of petroleum reserves on January 1, 1937.

In preparing the revised estimates your committee has used all available data on production and discoveries during the years 1935 and 1936, and it has carefully studied the history of development during this period. The total production during 1935 and 1936 was 2,044,000,000 barrels. The committee estimates that during these two years discoveries (new pools and new pay sands in old pools) amounted to about 1,477,000,000 barrels. A review of the estimates made in October, 1935, in the light of present information, shows that these were too conservative and they have been revised upward 1,455,000,000 barrels, an increase of approximately 12 percent.

The table merits careful analysis. Column A, for January 1, 1935, was made on the basis of data available in 1935. Similarly, Column C has been made on the basis of information available now. Therefore, these two columns are exactly comparable, and it is noteworthy that they reveal an increase in estimated reserves amounting to 886,000,000 barrels. On the other hand, Column B is a revision of Column A, based on more complete data concerning the fields, the reserves of which were included in Column A. Similarly, it is to be expected that future revisions of Column C will be upward.

In compiling the data for these estimates your committee has used information furnished upon request by a large number of petroleum geologists and engineers to whom it is greatly indebted.

Proven Petroleum Reserves of the United States
(Millions of Barrels)

	(A) On January 1, 1935	(B) On January 1, 1935 (Revised)	(C) On January 1, 1937
California	3,500	3,261	2,956
	3,500	3,261	2,956
Rocky Mountain States—			
Wyoming	250	267	239
Montana	60	102	92
Colorado	12	16	15
	322	385	346
Central to Southern States—			
New Mexico	350	451	471
Texas	5,500	6,643	6,422
Oklahoma	1,200	1,235	1,141
Kansas	400	390	568
Arkansas	75	103	84
Louisiana	375	513	524
	7,900	9,335	9,210
Midwest and Eastern States—			
Illinois	35	37	28
Indiana	5	5	3
Kentucky	35	50	39
Michigan	45	64	44
New York	40	75	66
Ohio	30	40	32
Pennsylvania	240	340	307
West Virginia	25	40	32
	455	651	551
Total United States	12,177	13,632	13,063

(A) As estimated October, 1935, by the A. P. I. Special Committee on Production; sub-committee on known reserves (American Petroleum Industry, 1935, page 35).

(B) Revised February, 1937, by the A. P. I. Committee on Petroleum Reserves as a result of development subsequent to January 1, 1935, of pools discovered prior to that date.

(C) As estimated February, 1937, by the A. P. I. Committee on Petroleum Reserves.

FIGURE 1
Back of boilers on one of The Texas Company boiler installations. Note the method of supporting and bracing the units.

EASY ERECTION AND DISMANTLING PLUS HIGH SALVAGE VALUE FEATURE

Uniform Boiler Setting

By JOHN C. ALBRIGHT

WHEN making temporary installations of movable field boilers used as power for rotary well drilling in concentrated areas, such as Monte Bello and other fields of like character in California, The Texas Company has designed a uniform setting which is economical, because of its high salvage value. In addition to this desirable feature, the boilers are erected and mounted in such manner that the entire battery, whether it consists of three or four units or a greater number, may be easily and quickly dismantled, or knocked down, and moved to other locations with a minimum loss of time. One such installation, consisting of eight, 85-horsepower, 175-pound working pressure boilers, was made in the Monte Bello extension, and was used while drilling a number of wells on the company's Baldwin lease and others in that vicinity.

Mounted on Substructure

Each boiler is considered as a unit and the battery may be expanded or reduced in size as drilling conditions warrant. As steam requirements expand, additional units may be added to the battery quickly and without disturbing the operation of those already fired and on the line. When the local program of drilling has been completed to a point where a comparatively small amount of steam is required, units may be taken from the battery without interrupting continuous delivery of service to the wells in operation.

The boilers are assembled and equipped with the necessary piping before being set above its combustion chamber on the foundation structure. Skids, permanently attached to each unit, serve as the boiler foundation, which in turn is mounted upon a substructure carrying the full weight of the unit; so that the combustion chamber may serve the purpose of a furnace only, carrying no weight other than its own firebrick walls and accessories.

Skid Construction

Each skid is bevel cut at both ends so that a sled

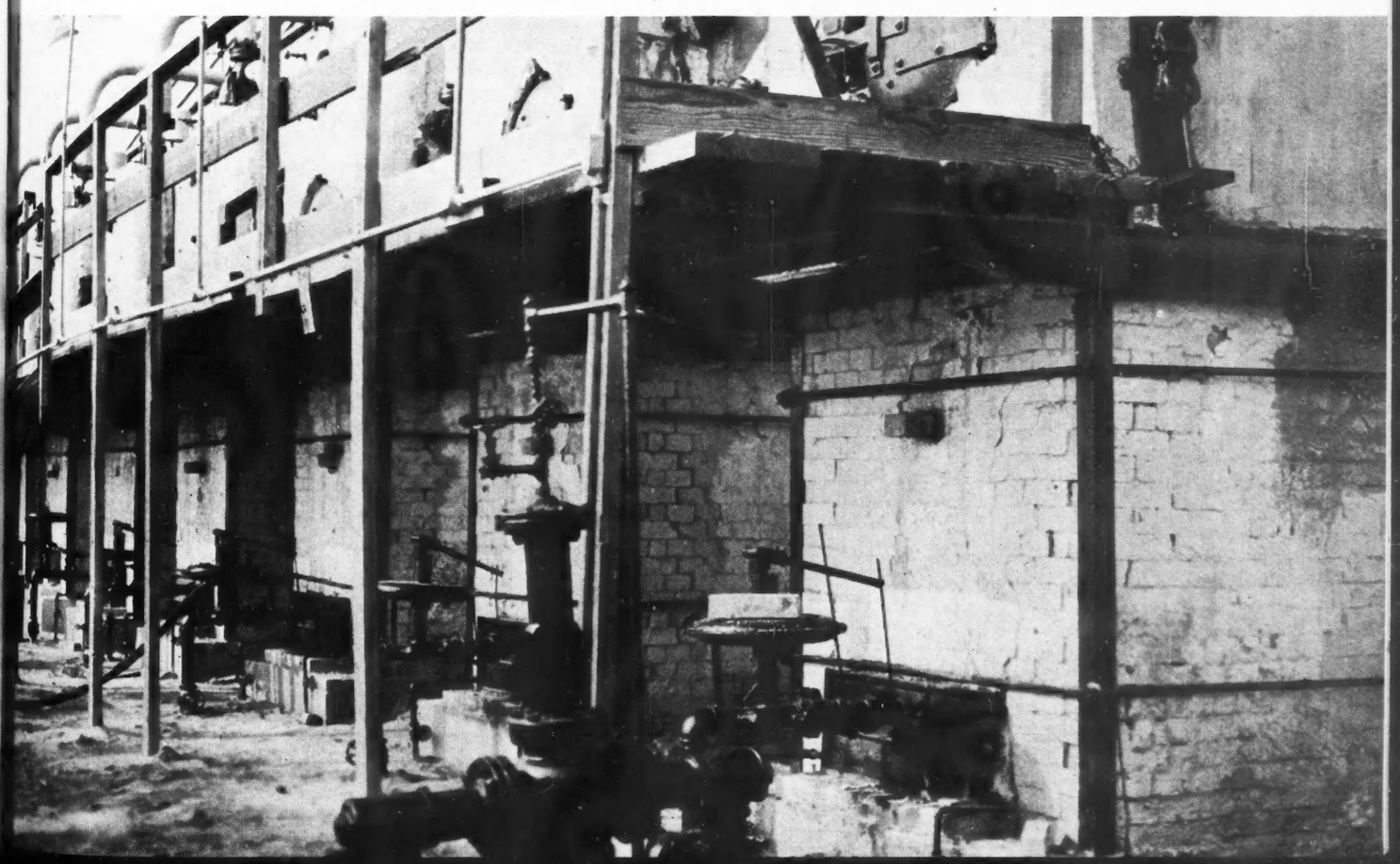
runner effect may be obtained to facilitate longitudinal movement of the boiler when making changes in the number of units required at the battery. The skids upon which each boiler rests are made by using six-inch drill pipe about 24 feet in length, which permits it to run the full length of the boiler and extend out in the front about one foot. Two such lengths of drill pipe are used for each boiler, and are connected to each other with three welded five-foot one-inch lengths of four-inch drill pipe. The cross member connections are installed at three points in the foundation, one just back of the firebox, one just in front and one at the rear beneath the smokebox. These cross members are welded to the skids flush with the upper side so as to provide clearance for the skids to move without catching on bolts and other obstructions. As the sides of the firebox of the unit rests upon the skids, provisions have been made to support the back of the boiler on a horizontal plane with the other parts of the unit. Vertical risers with cross members are welded to the rear end of the skids to support the end of the boiler. To prevent a possibility of sagging at the point where the boiler touches the cross member, a third riser is placed under the center. Figure 1 shows the construction of the boiler foundation.

After the skid assembly is completed, the boiler unit is placed in position and tied down with convenient lengths of used rotary chain looped across the boiler at the front, just above the firebox, at the rear of the firebox and at the back end above the last supporting cross member. Lugs are welded to the skids on both sides of the skid assembly with holes drilled through the plates to make provisions for using eye bolts attached to each end of the boomer chains. The rotary chains are cut to the desired length so that the last pin can be inserted through the eye of the bolt. Sufficient threads are made on these bolts to permit the desired tension to be placed on the tie downs, making, in effect, a single unit of the boiler and skid assembly. After being bound to the skid assembly, the boiler is insulated, covering the entire outside of the unit, as well as the binding chains.

Substructure Design

The substructure of the unit is designed in sections consisting of two bends, or supporting frames, made by using drill pipe not suitable for drilling service. See Figure 1. Each bent contains two vertical risers, about five feet in length, with ½-inch thick boiler plate welded on both ends of each riser, of sufficient dimensions to support the required weight and provide for the desired factor of safety. The risers of the bents are connected to each other with three-inch pipe braces placed diagonally, and welded in place permanently. The front bent, designed to be placed beneath the skids back of the firebox, is fitted with plates on top of the bent risers, and is curved to fit the corresponding cross member between the sides of the skid assembly at this point, which prevents slipping of the boiler unit when placed in position. To make the setting more secure, a flat strap is welded to the cross member of the skid assembly at a point where contact is made with the riser plate. This is curved in shape and extends at the outer end so it will lay flat on the plate. Holes are bored through both the plate and strap to provide for ½-inch diameter by 2-inch machine bolts, which are to be inserted as soon as the boiler assembly is placed in position upon the substructure. The cross members of the skid assembly are tied down to the back bent assembly, which is identical to the front unit, with U bolts placed around the

FIGURE 2
The Texas Company's boilers showing front of setting with raised walkway and gas burner installation.



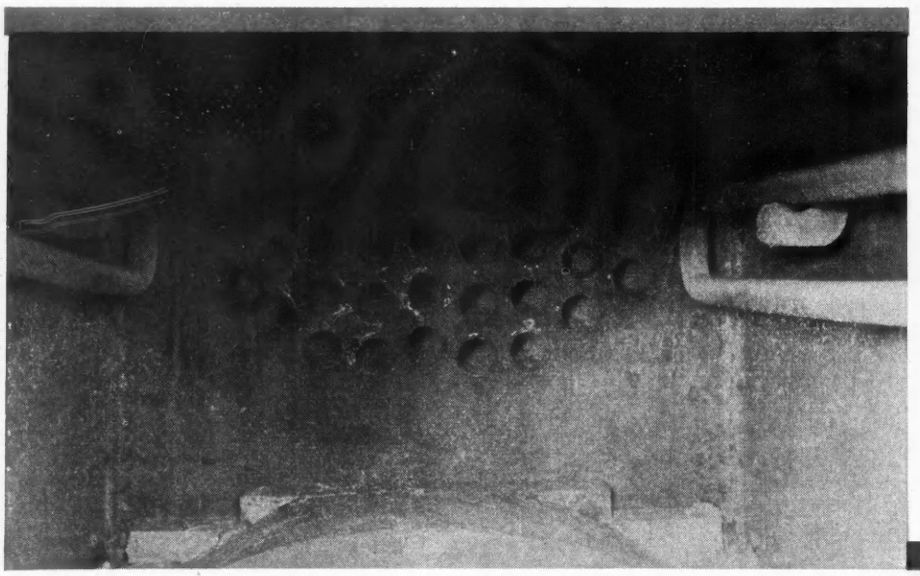


FIGURE 3

Interior view of firebox, showing "Santa Fe" Arch and arrangement of superheater coils used by The Texas Company.

cross member of the skid and through holes bored in the top plate of the substructure.

The lower end of each bent or riser of the substructure is fitted with heavy sheet metal plates welded in place. These plates rest upon concrete footings carried to firm natural ground. Foundation bolts are placed in the concrete footings. The forward and rear bents of the substructure are connected to each other with diagonal cross braces, made of four-inch drill pipe, flattened at each end and drilled to take ¾-inch machine bolts, which pass through the risers and the ends of the cross members, or braces, instead of being welded. This provides for ease and rapidity of erection and dismantling. With this type of setting, the boiler assembly, with its skids, has only two bearings points, at the rear of the firebox and under the stack.

When a location for a battery of these boilers has been selected, the footings are prepared by excavating the top soil until solid natural ground has been reached and a mixture of concrete (1:3:4½) is poured for the foundations. After setting until sufficiently cured to sustain the load, the bents are erected and tied together by the bolted cross members, after which the boiler assembly is placed in position. A truck carrying the boiler is backed up to the setting, the boiler skidded off the bed and slightly hoisted to clear the top of the substructure, held in that manner until in position, when it is lowered and secured by attaching the U bolts at the rear and the strap bolt at the front bent of the substructure.

Building Fireboxes

After the boiler has been placed in position upon the substructure and secured by tieing down at the designated points, the combustion chambers are built beneath the firebox. See Figure 2. Each combustion chamber of the furnace requires about 1800 fire brick and about 300 pounds of fireclay, a quantity of sand and broken firebrick. The floor of the combustion chamber is covered with about three inches of sand procured locally, after which it is covered with firebrick and broken pieces, matted together with fireclay so the tips of the broken pieces are exposed, especially at the rear of the chamber. The walls of the combustion chamber are built about nine inches thick, extending above the mudring of the boiler to protect that portion of the unit and prevent

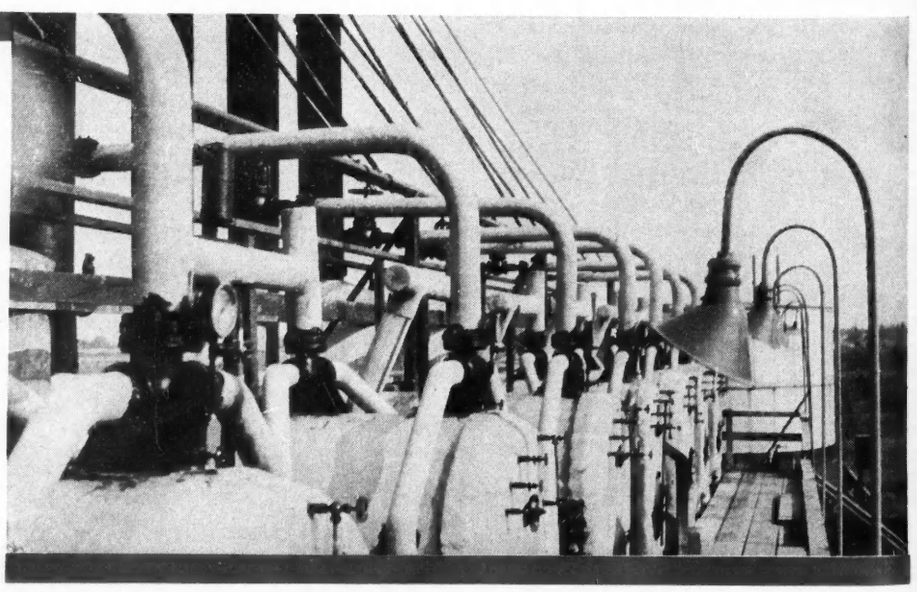


FIGURE 4

Piping arrangement of superheaters used by The Texas Company.

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the flames from combustion of the fuel reaching the skids and other parts of the setting. All joints are packed with loose asbestos to exclude air from the firebox and combustion chamber except where it is desired to enter.

If oil is the fuel to be used, the burners are inserted through the front of the combustion chamber walls, and are placed at an angle so as to direct the flames downward upon the back part of the floor, which is filled with a greater portion of firebrick rubble than if gas is to be burned. The back of the combustion chamber, at the lower part of the rear wall, is made concave to drive the flames upward and back towards the firebox door. To prevent impingement upon the back mud ring and the fluesheet directly, an arch, sometimes called a "Santa Fe" arch is placed in the firebox. See Figure 3. This arch is made of firebrick and is about 12 inches wide, serving the purpose of directing the hot gases and flames evenly over the side and crown sheets before they enter the flues of the boiler. If gas is the fuel selected, the burners are placed at the lower side of the front of the combustion chamber, utilizing automatic regulators and draft doors, each working in conjunction so that as more fuel is required, a larger amount of air is admitted to the combustion chamber.

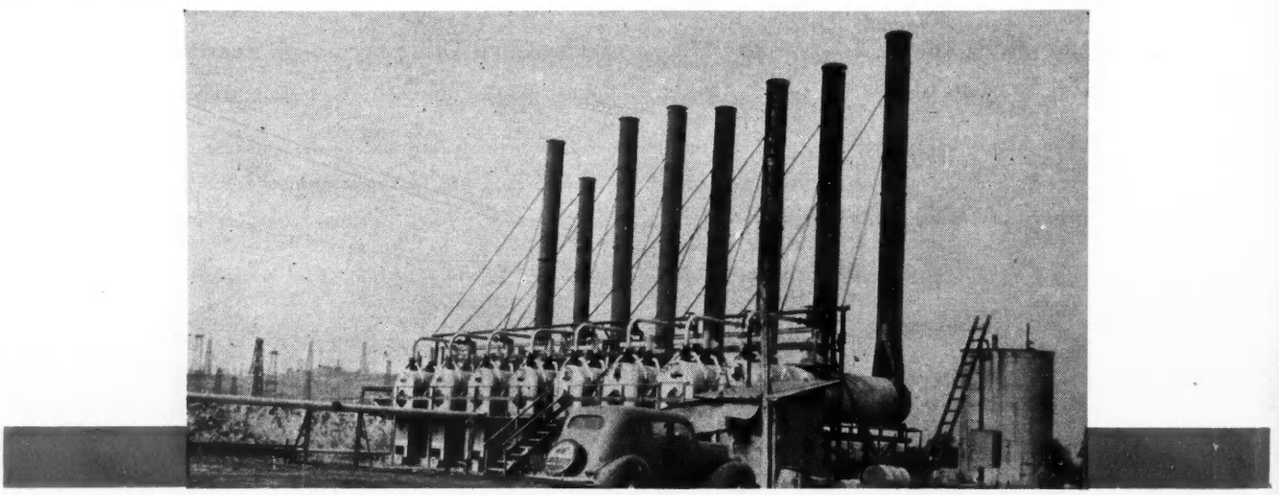
In most installations of this kind superheaters are installed in the firebox of the boiler so the piping lays against the side sheets and is supported by tube hangers. The particular type of superheater used at Monte Bello requires the piping carrying the saturated steam to be extended from the "niggerhead" on the steam chest toward the front of the unit, where it branches and extends downward to the side of the boiler. Each boiler having this type of superheater installed is fitted with two openings containing rolled flues on each side through which the superheater connections enter and return outward. Four superheater tubes lay on each side of the firebox against the side sheets, and the steam travels from each section through an individual header to the main steam line.

The individual header of each boiler runs from the point where the two superheater lines connect, and are attached with flanged fittings so that dismantling is made more convenient. See Figure 4. Erection of additional units to a battery already in service is easily made by employing flanged fittings, all interchangeable from one boiler to another so that all connections fit at the proper point without welding or making up nipples. The main steam header rests upon the front substructure concrete footing near the ground, which is also made up by using any number of sections, each of which fits where it was designed to be placed. Gates are used on the individual boiler steam lines so that any number of boilers may be cut out for cleaning or removed from the battery without disturbing the operation of the remainder.

The stacks are supported upon the battery and guyed to the setting independent of outside posts or auxiliary equipment. Risers welded to the skids in front of the steam chests and sufficiently high to clear the steam piping carry the rail to which the stack guy rods are attached. A convenient ring placed around each stack is equipped with bolts for attaching the guy rods and serves as the upper connection for this part of the equipment. When erecting a battery of these boilers, the stacks are equipped with demountable guy rods as they are being made ready to hoist upon the bonnets, and immediately upon being placed in position, the guy rods are brought back to the guy rail to be attached with U bolts; making a substantial bracing arrangement.

When a battery of these boilers has served its purpose at the location, the steam lines are unflanged and the stacks lowered. All that remains to be done is to disconnect the fuel and water lines, remove the U bolts from the substructure and take down the brick combustion chamber. Being mounted above the ground level, it is convenient for a truck to back under the firebox and in a comparatively short time, the individual boiler is moving to another location. Having made the skid assembly of all boilers to scale and fully interchangeable, other substructures may have already been erected to receive the boilers upon arrival at the new location, and steam may be generated almost as soon as the connections have been made. As the boilers and skids are what might be termed a single unit, bound to each other by the rotary chains, boomer chains can be thrown across the skids and bound to the bed of the truck without damaging or defacing the insulation.

To make the operation of the battery convenient to the boiler fireman, a walkway is usually built across the front of the boilers, partly supported by the extension of the skids and partly by 2-inch by 4-inch wood posts. Electric wires carried in conduit attached to the side of this walk make it possible to place flood lights so that adequate illumination is obtained.



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Offset Water Well

POWERED FROM BACKSIDE OF CRANK IN SIMPLE MANNER

By FRANK B. TAYLOR, Staff Writer

LEASE water for general use is being obtained from an offset to the discovery well of Hilger pool, Reno County, Kansas, in a simple and satisfactory manner. The water well has been drilled to a fresh water bearing sand at 107 feet, only a few paces from the floor of the oil producer. Water from the well is pumped directly into a 1600-barrel storage tank approximately one eighth-mile from the location, and is being lifted to the surface by the ordinary lowered pumping barrel arrangement.

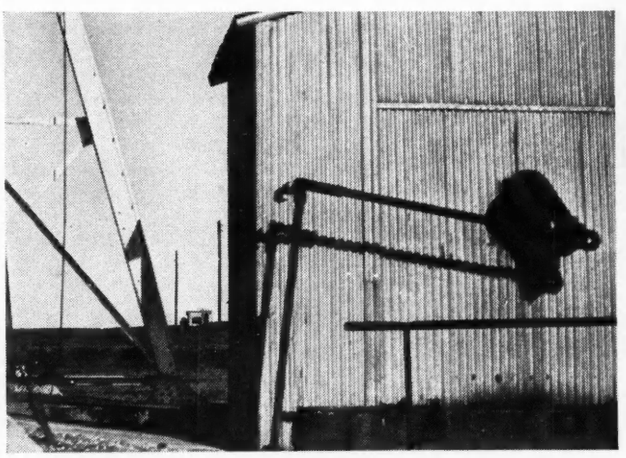
The customary rod hookup to the water well has been replaced by a cable draw, operating from the backside of the crank. A removable hook attachment makes discontinuance of the water well's operation easy at any time. Pumping time is dependent upon that of the producing oil well, which has been operating at an average of 21 strokes per minute.

Attachment to the crank is through a pinned connecting rod to a seven foot length of 1½-inch pipe upright, set in bearings to parallel the motion of the driver. The bearings supporting the pipe are firmly set in a concrete base of 18 x 20 inches in area. The hook for connecting the pumping cable is permanently attached at the top of the pipe.

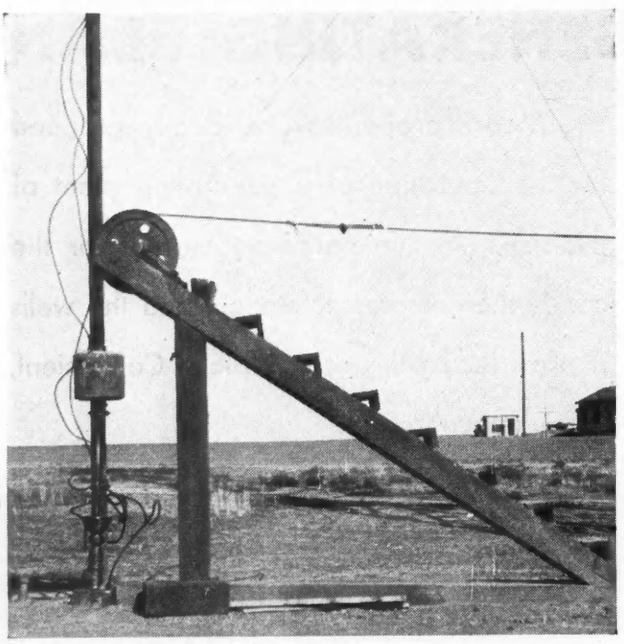
Two standards of pipe, supporting the cable draw seven feet above ground level, are used between the movable support and the water well. Each of these is set in concrete and has at the top a pulley and guide for the cable. Directly above the well head a sand sheave is mounted at the top of a wood frame, the shaft seated against blocks. Beneath this wheel is connected a weight of approximately 140 pounds made by pouring cement into a discarded casing collar and thread protector. Immediately beneath this weight the pump rod is connected.

Due to the shallow depth of the well, the weight of the rods is not sufficient to hold the cable taut during the down stroke. This condition has been eliminated through the use of the weight mentioned. A short distance from the sheave a cable clamp has been inserted as it was found through continuous operation that this point was more subject to wear than any other. About 65 feet of five eighth-inch cable is being used in the installation, with an enclosed hook for attachment to the backside of the crank.

Backside crank attachment in operation but without the water well cable being connected. The pipe standard is mounted on bearings. The first of two other supports, and showing the pulley used as a guide, can be seen against the derrick. The enclosed hook is to the right of the latter mentioned upright, resting upon the ground.



Method of connecting weight beneath sheave and above well head. Sand sheave is mounted at the top of a standard having steps to the top, and is held in position by blocks on each side of the frame. A bleeder is connected to the simple well head directly above the ground level.



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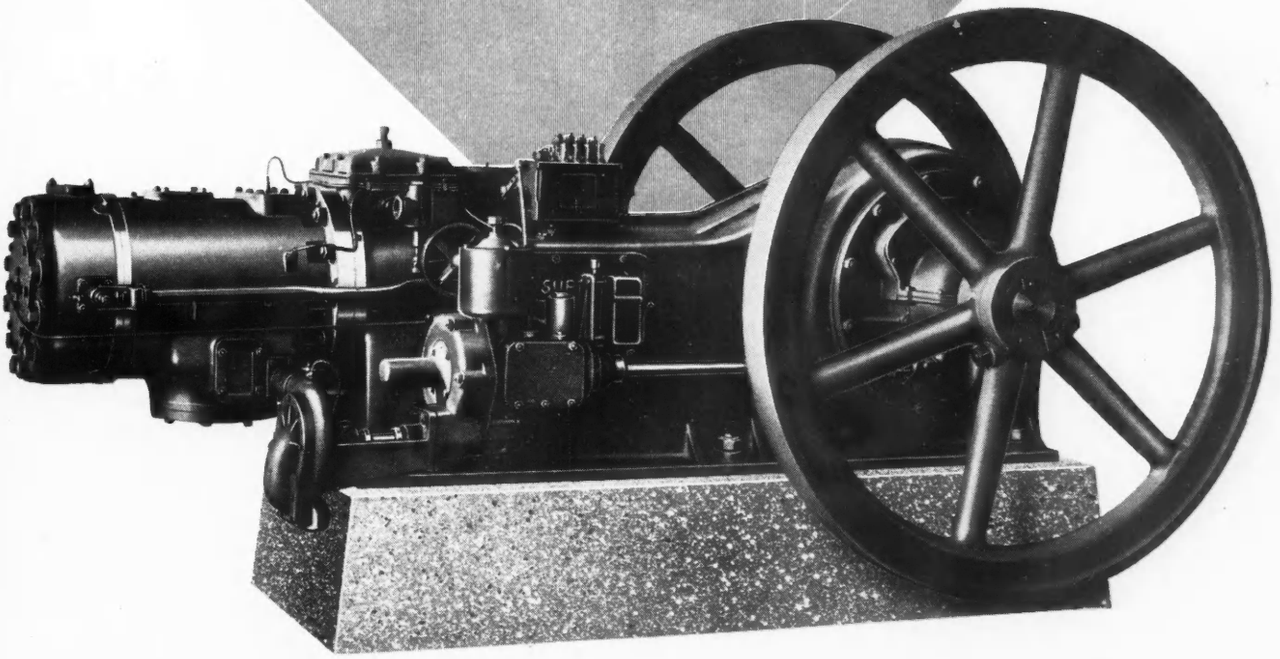

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ANALYSIS OF INDIVIDUAL PERFORMANCE IS ONLY ONE CONSIDERATION IN DETERMINING

When to Abandon Wells

By BRAD MILLS, Associate Editor

ABANDONMENT of questionable producing wells in old California fields has given a few operators an opportunity to study the effects of the change on lease costs. Outright elimination of very weak wells in settled fields usually has followed an observation period, during which the action of each well was carefully studied by the producing companies. It is believed by one operator that abandonment of apparently hopeless wells is the principal factor in returning many old leases to a profitable operating basis, but other companies hold to the theory that it is wiser to shut in weak wells than to abandon them outright.

An analysis of well performance proves that the average producing company does not know the exact status of wells that should be classed as "chronic delinquents." This condition particularly applies to leases that show a single accounting for a large number of wells. A lease usually is the smallest unit considered where no systematic well cost breakdown is maintained.

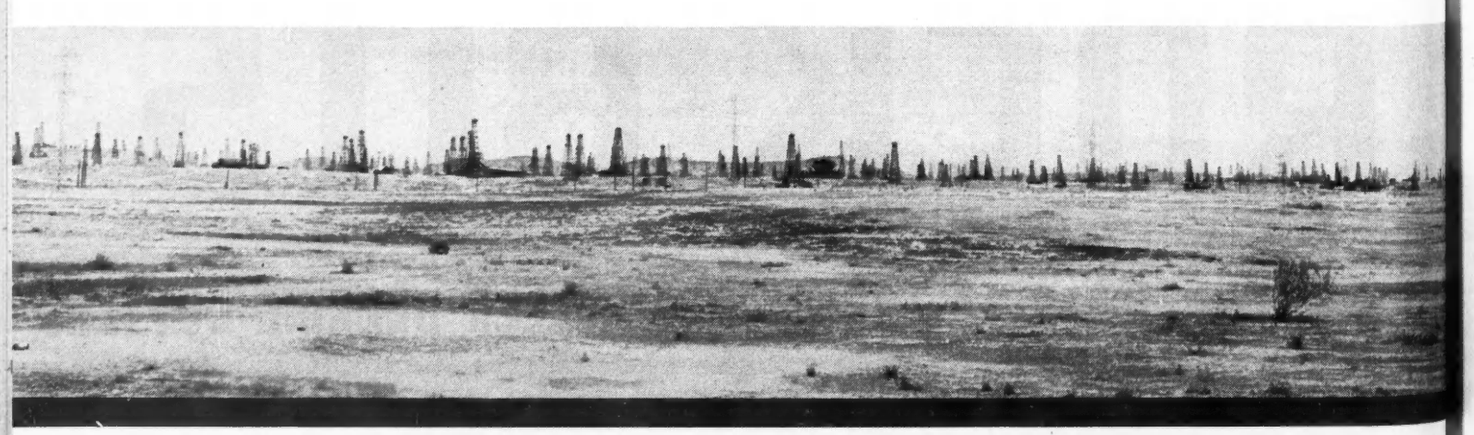
The very thought of abandonment frightens the operating company that is not sure of the status of each producing well. The fear that a producer of some merit would be abandoned doubtless has prolonged the erratic producing life of many unprofitable wells, yet the same fear undoubtedly has saved many potentially profitable producers from untimely abandonment.

The abandonment of small wells involves consideration of several factors. A well that can be operated at a profit during prosperous times may fall into the losing column during the periods of low oil prices. A radical change in the mechanical status of a well often justifies abandonment, following a long and profitable operating period that required no major repairs or replacements. It has not been unusual for operators to complete expensive repairs to wells that failed to return a profit under the newer and greater capital and expense outlay.

Conversely it might have been possible to restore some of the wells to the profitable column prior to abandonment, but their past performance did not show more than a slight ray of hope. Repairs, cleaning-out operations, reservoir conditions and other problems usually influence the large operators in their abandonment programs, and lease requirements must be considered in all cases.

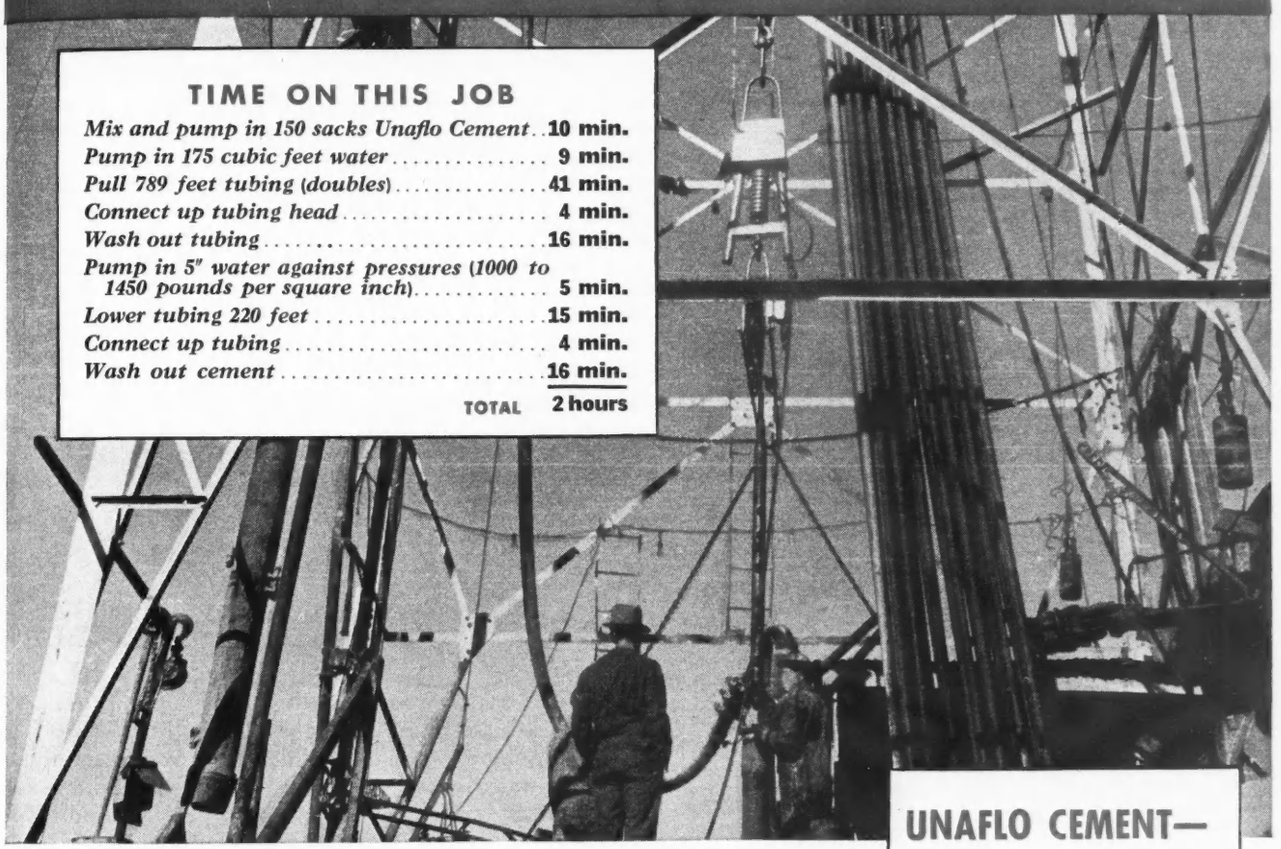
Reopening After Shut-in

Large groups of wells stand idle, virtually abandoned, awaiting decisions to work over, deepen, or place in a producing condition. Such fields as Kern River, Midway-Sunset and Coalinga contain a large number of these questionable producers. The reopening of old wells after a long shut-in period has led to increased abandonments in a few shallow fields, where the loss of hole is a negligible factor.



Profitable operation of many wells in the Midway-Sunset district requires sound production practices. Abandonment is deferred because of deeper oil possibilities.

Operator says Unaflo saved $3000.00 on this job!



TIME ON THIS JOB

Mix and pump in 150 sacks Unaflo Cement	10 min.
Pump in 175 cubic feet water	9 min.
Pull 789 feet tubing (doubles)	41 min.
Connect up tubing head	4 min.
Wash out tubing	16 min.
Pump in 5" water against pressures (1000 to 1450 pounds per square inch)	5 min.
Lower tubing 220 feet	15 min.
Connect up tubing	4 min.
Wash out cement	16 min.
TOTAL	2 hours

● An Oklahoma City well was found to have 259 feet of open hole below the 7-inch shoe at 6122 feet. To plug back, tubing was lowered to 6113 feet, and water pumped in for more than two hours without returns.

150 sacks of Unaflo Cement were mixed into a heavy slurry, pumped into the tubing and partially displaced with 175 cubic feet of water.

The tubing was lifted 789 feet by pulling twelve doubles and one single, and flushed. The cement was squeezed at 1450 pounds per square inch.

After applying the squeeze there still remained an excess of 220 feet of cement in the casing. After one hour and 44 minutes, the tubing was lowered 220 feet into this cement which had been subjected to temperature and pressure; circulation was reversed and the excess cement (220 feet) was washed out through the tubing in 16 minutes. A perfect job completed with the top of the cement body exactly where the operator wanted it.

Unaflo made it possible to complete the job without moving in tools to drill out the excess cement. Try Unaflo on your next job.

Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), Amicable Bldg., Waco, Texas; Kansas City; Tulsa; Oklahoma City.

UNAFLO CEMENT—

1. Gives you more time to get it down.
2. Remains fluid longer.
3. Follows irregularities of well bore and casing.
4. Hardens thoroughly with high density after it is placed.
5. Displaces contaminating elements in the well.
6. Not stiffened by mud contamination.
7. Not stiffened by salt water contamination.
8. Sets satisfactorily in sulphate water.
9. Requires no ice.
10. Makes squeeze and plug-back jobs easier, surer and more successful.

U-10

USS

UNAFLO

FOR SAFE DEEP-WELL CEMENTING

Corrosion, water and sand attack idle wells in a variety of ways, and attempts to restore many old producers to a pumping status have resulted in substantial losses. A high percentage of such wells were on the verge of giving trouble when shut in, and the intervening years of inactivity included the period that would have given trouble under normal operating conditions.

A systematic attempt to determine the status of a well over a long producing period requires consideration of factors not ordinarily known or recognized by many small operators. Depreciation is an item often overlooked by the operator who manages to show a month-to-month profit, but the great latitude in the application of depreciation easily leads to different conclusions.

Abandonment of wells in very old and shallow fields does not offer the complications that might follow an extensive abandonment program in major fields that appear in line for deeper production. Most of the abandonments have been confined to shallow producers in fields that are largely depleted.

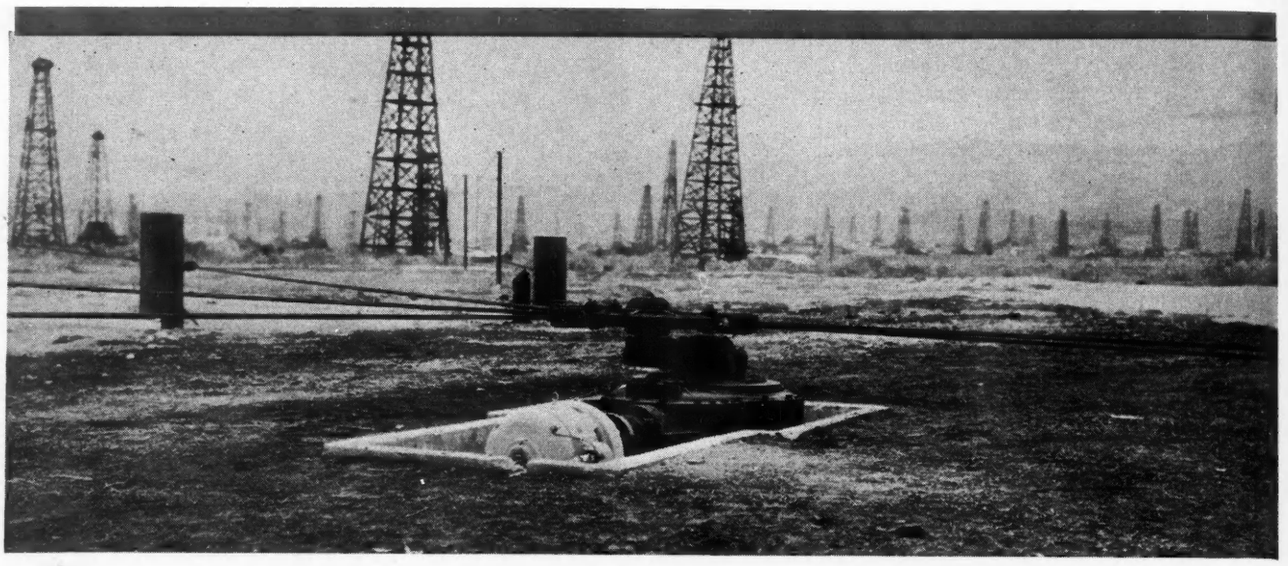
Status of Individual Wells

A major company operating in the Kern River, Coalinga and Midway-Sunset fields has developed a plan for determining the status of weak producing wells. A cost sheet is run on each well at regular intervals. Where a group or lease of wells is operated as a unit, it is difficult to follow the action of one well unless each producer is singled out for observation at regular intervals.

A lease with a 10-, 8-, 6-, 3- and 2-barrel producer may stay in the "black", yet one or two wells may be showing a loss. An observation period has revealed that several very small wells among a group of larger producers have not been producing enough oil to warrant continued operation.

Where small wells have been produced on individual pumping units, the decision to abandon has been reached with less difficulty than where the questionable wells where produced in large combinations with various power types. To justify a separate prime mover and full well equipment a producer must show a reasonable return on the outlay.

It is necessary to consider the cost of repairs or changes in weak wells before starting extensive improvements or power changes. Where a short-range viewpoint is maintained, it may be cheaper to abandon a well than to repair it. A very small well that requires a new casing string, a new pump and extensive surface replacements holds little hope for the producer. Actual consideration and recognition of the maximum production expected would leave little margin for profit even under perfect conditions. Changes in power equipment have saved many small wells from abandonment where other factors were favorable and equipment in good condition below the surface.



Small pumping powers are used in several settled fields. Abandonment is not considered where a well can be connected to a power at little extra cost.

Trouble With Land Owners

During the past five years one major producing company has been reluctant to completely abandon any well in any field. There have been and probably are so many "sleeper" zones in such fields as Long Beach, Santa Fe Springs, Midway-Sunset and others that by complete abandonment the operators would burn all bridges behind themselves, and often would be forced to give up or lose the property.

To illustrate this condition it is interesting to observe that one company now is redrilling to, or plugging back to and perforating in one particular zone at Santa Fe Springs, in which in 1922 to 1926 a large number of wells were completely abandoned. Several wells recently were completed in one way or another in this old zone, which has assumed a new importance with changing trends. This company also was a party to several lawsuits following the abandonments of more than 10 years ago, drainage damage having been the basis of all suits.

In the Midway district The Texas Company has

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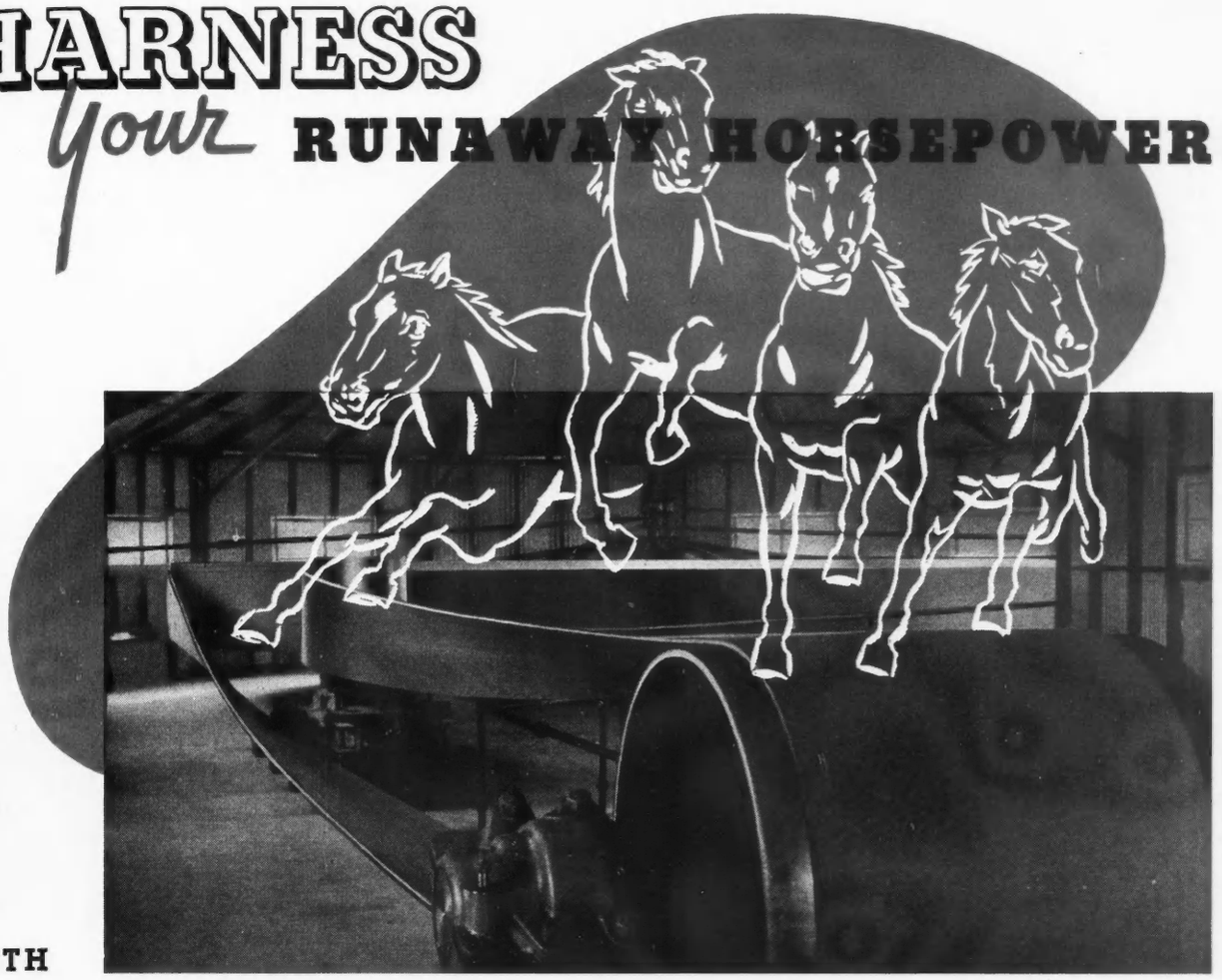

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owned an old lease since 1900. Seven wells were drilled on this lease but all of the wells could not produce more than 30 barrels per day at the beginning of 1932. Most of these wells were up for abandonment, and probably would have been abandoned, except for the depression and the wise decision of one executive who opposed elimination of any of the group of producers. Since the property was owned in fee, there was no necessity for abandoning and quitclaiming the lease. At the present time the company has on this one lease a daily production of 2000 barrels from only three wells, and now is drilling vigorously with two strings of tools in an effort to develop a new zone discovered in 1936. Although the seven wells as they stood in 1932 probably justified abandonment, more recent developments proved the wisdom of the postponement.

Water Production

Production of large quantities of water with little oil is the chief factor in considering abandonment, rather than a very small clean production. Development of a bad casing string reverses this condition, however, and in very small, clean producers the replacement of a full casing string is seldom justified. Even in bad water wells, most of the major operators run electrical logging devices and critically examine the entire producing section before abandonment. After such precautions are taken, one company tests all possibilities on the way out.

Landowners and royalty holders are not hesitant about protecting their interests, and leases carrying the usual royalties are susceptible to attack from a dozen angles. Fear of these interests has saved many small wells from abandonment in California, but subsequent development in a dozen fields has vindicated the zealous attitude of the land owners who stressed deeper zone possibilities.

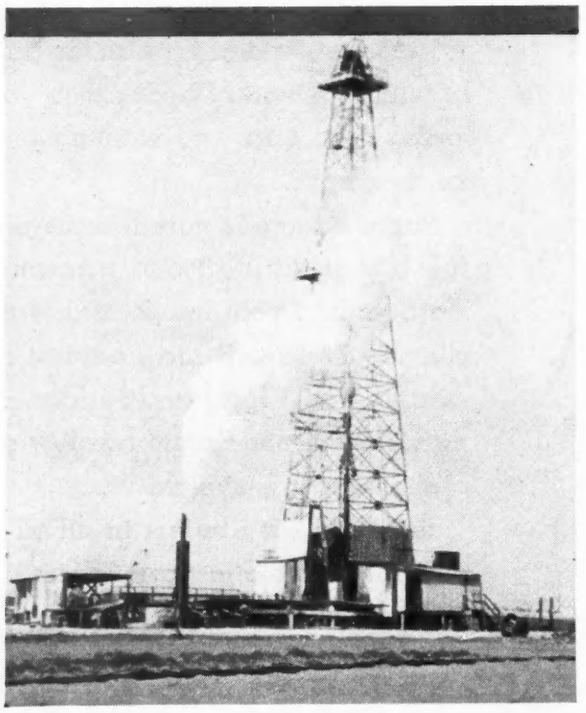
State Supervision

The State Division of Oil and Gas must approve abandonment before the operator proceeds. The department requires mudding up of collapsed liners and plugging all perforated casing possible with cement up into the blank casing. The department also requires witness of location and hardness of such plugs at certain points. No casing may be pulled except that in blank casing. These requirements constitute good abandonment practice in any event, but with such supervision the zones and fields are protected from damage that might be done by irresponsible operators. Before the proposed date of commencing work to abandon a well, the supervisor or deputy must furnish the operator with a written report of approval of his proposal, or a written report stating what work or tests will be necessary before approval to abandon will be given. The supervisor may request additional information from the operator before making recommendations. Where an operator thinks it impossible to abandon a well according to department regulations, he may attempt to compromise on certain doubtful points. During the course of abandonment it is not unusual to change plans, since it may be impossible to meet all requirements. The department's witness attempts to be fair in all of his reports, and changes in recommendations may be either favorable or unfavorable to the state.

Several contractors submit bids to producing companies when a group of small wells are up for abandonment, and it is not an easy matter to determine the most attractive bid. When bidding on the same project, the three or four contractors will submit bids that involve entirely different methods of attack on the problem. One contractor may submit a bid that calls for complete abandonment of a group of wells at no expense to the oil company, provided the contractor is allowed to keep all or specified parts of the salvage. Another contractor agrees to abandon the wells as directed by the State Division of Oil and Gas at a very small cost to the oil company, but the contractor reserves for himself all surface equipment. Another contractor agrees to abandon the wells and pay the oil company for the work, provided he is allowed to take all the salvage for himself. Still another contractor agrees to abandon the wells at a certain figure, and the oil company retains all salvage. The nature of a contractor's bid usually is affected by his immediate equipment needs.

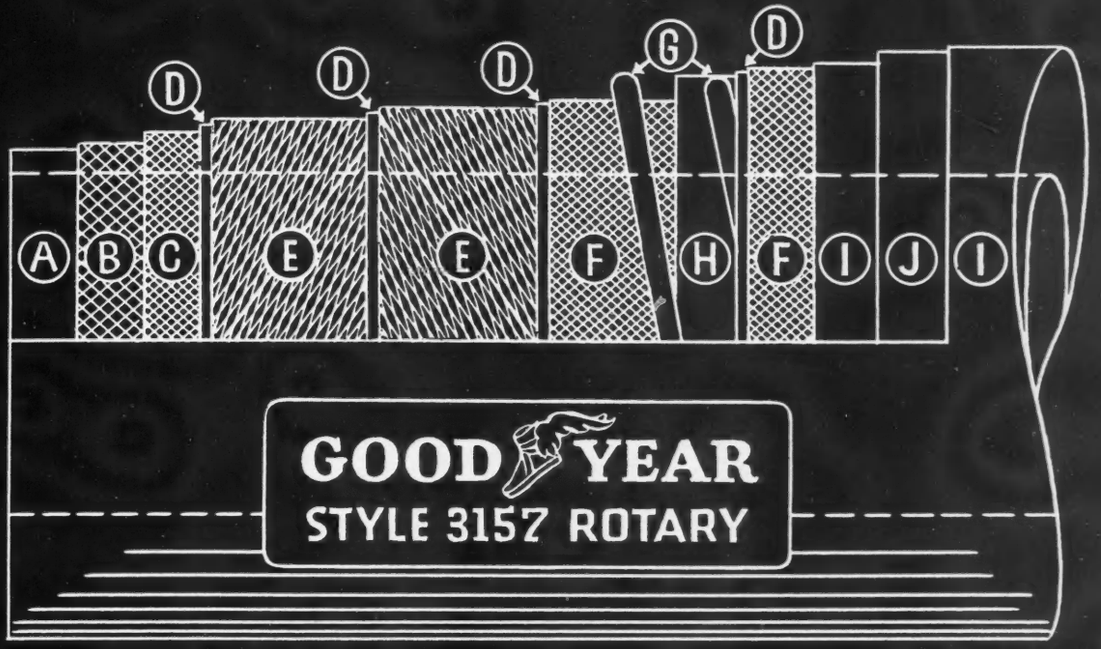
A group of 20 wells was abandoned at Coalinga and a second group of 34 wells is up for abandonment. The bids submitted were so varied that it was next to impossible to determine which was best.

Due to the strong demand for crude oil, oil companies are reluctant to abandon producing wells of any type. Where a well can not be pumped at a profit, the small producer is shut in to await developments.



Ohio Oil Company drilling in the new El Segundo field near Los Angeles, finds that the formations here drill easily. Some crews make as much as 500 feet in a day.

BUILT TO STAND HARD WORK ... AND HARD KNOCKS!



Guaranteed test pressure: 4,000 pounds
Recommended maximum working pressure: 3,000 pounds
***Approximate burst: 8,000 pounds** (static type test—closed ends)*

- **A** — Heavy abrasion-resistant tube.
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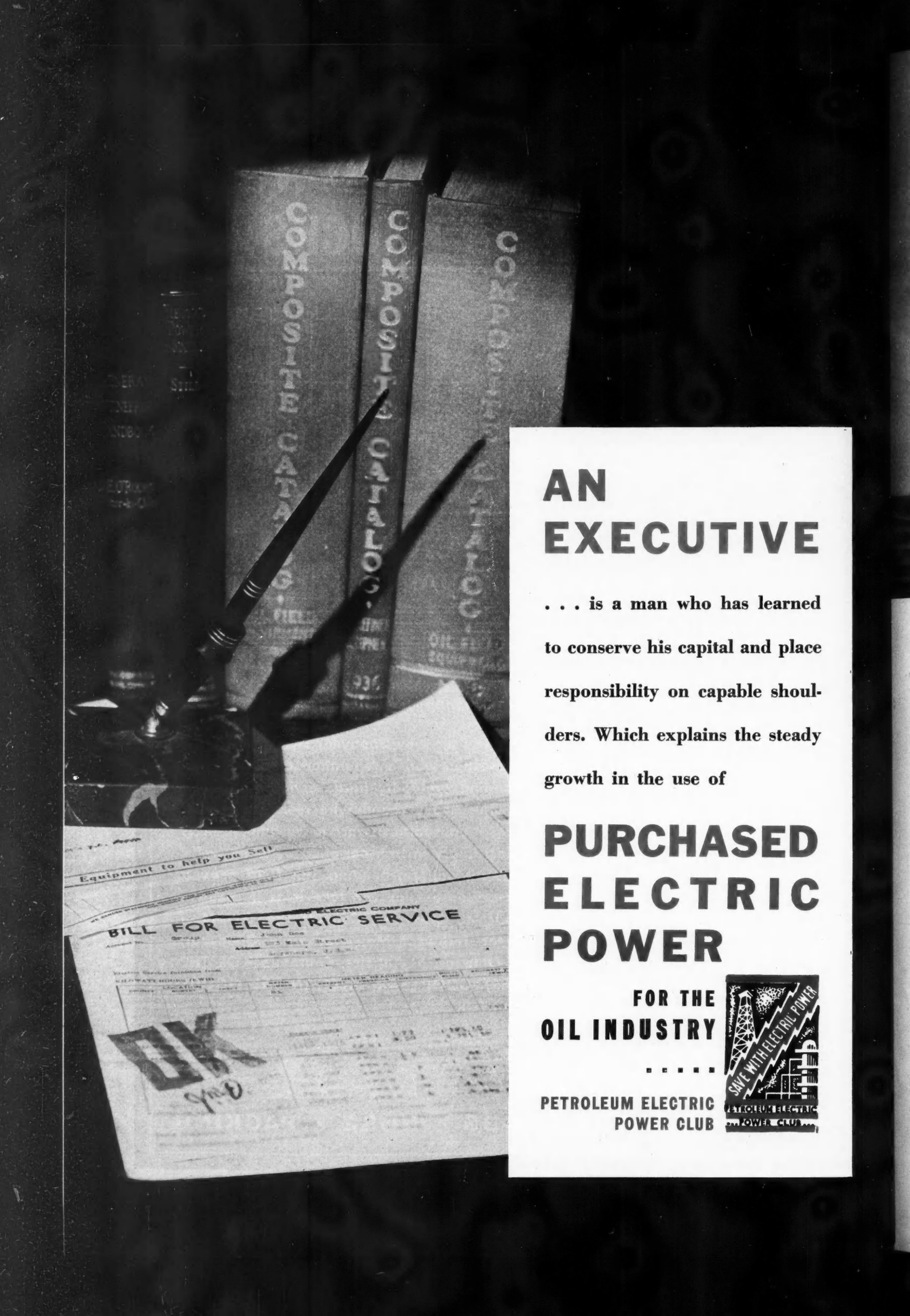

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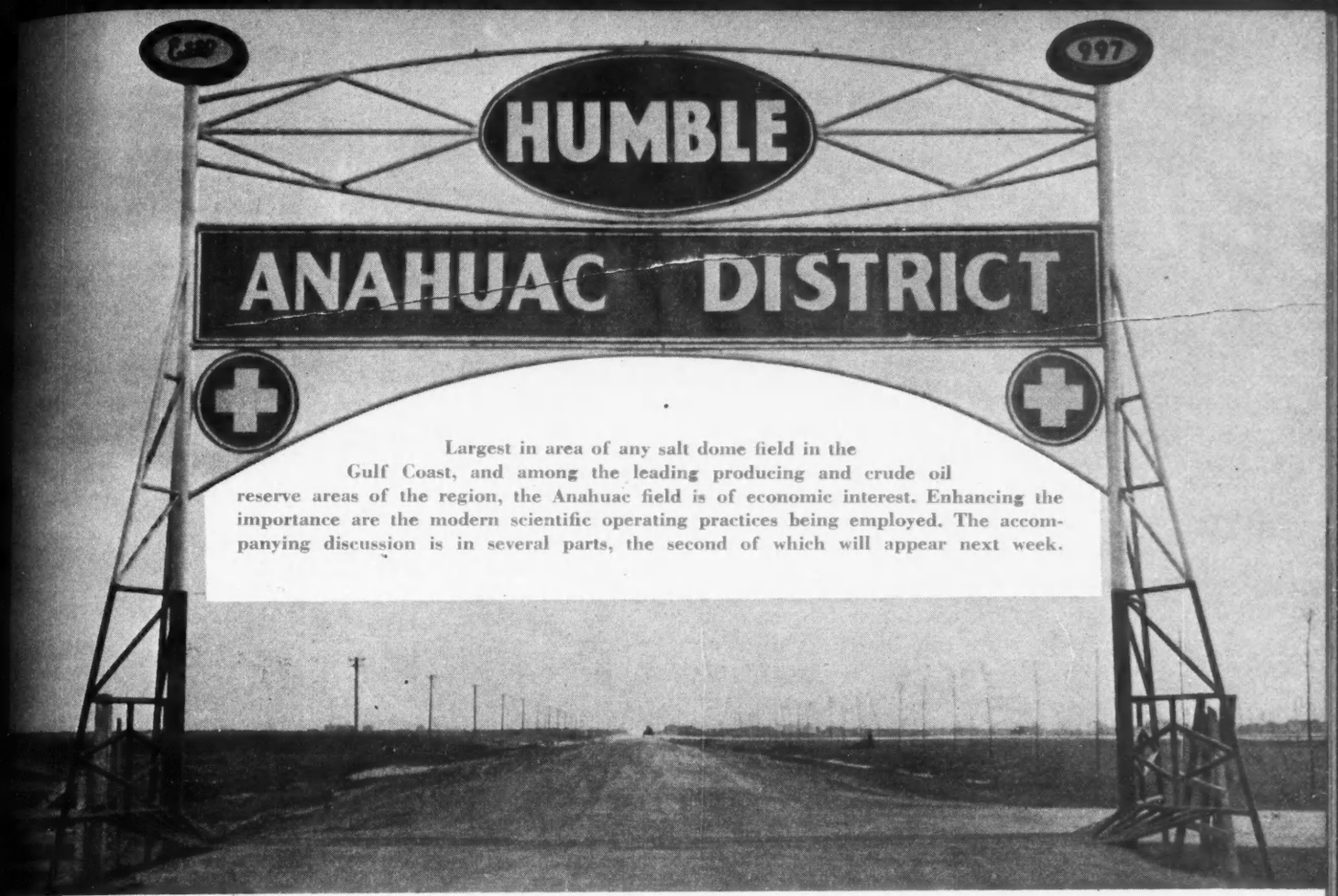

HUMBLE
ANAHUAC DISTRICT
Largest in area of any salt dome field in the Gulf Coast, and among the leading producing and crude oil reserve areas of the region, the Anahuac field is of economic interest. Enhancing the importance are the modern scientific operating practices being employed. The accompanying discussion is in several parts, the second of which will appear next week.

A Trip to Anahuac

ONE OF THE MOST SCIENTIFICALLY OPERATED FIELDS IN GULF COAST

By CHARLES LEYENDECKER, Staff Writer

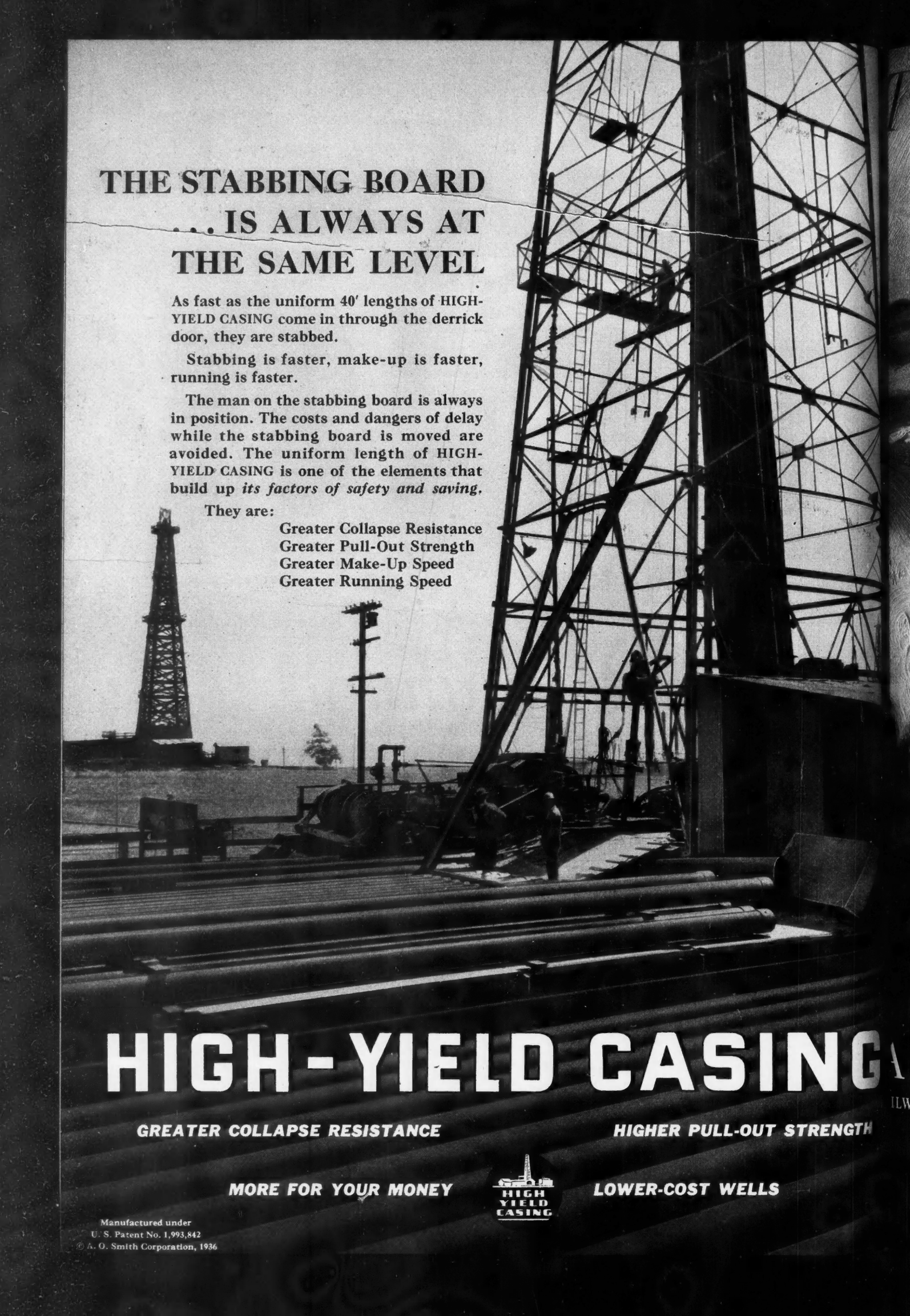
ANAHUAC field was two years old the past week. It has developed into one of the largest fields in the Gulf Coast producing from a deep lying formation. In fact, it is exceeded in proven and productive area only by one other coastal field, Conroe. Since Anahuac lies in the salt dome belt and Conroe is located in the so-called Conroe Trend region, Anahuac may be called the largest field in size yet discovered in the salt dome belt.

Anahuac, in the northern central part of Chambers County and about six miles east of the town of Anahuac and approximately 75 miles east of Houston was discovered by Humble Oil & Refining Company. The company's A. D. Middleton 1, H. & T. C. Survey, Section 58, was spudded on December 8, 1934, and first showed for a producer on March 6, 1935, when it made an estimated 1,500,000 cubic feet of gas daily and five barrels of distillate per hour from Frio formation at 7055 feet. The well was later killed and deepened to 7088 feet, and on March 16, 1935, came in making 32 barrels of 35.6 gravity pipe line oil per hour through a 3/8-inch choke. Tubing pressure was 2150 pounds; casing, 2400 pounds.

Little was it realized that this wildcat would open the largest oil field in the salt dome belt of the Texas Gulf Coast. This vast region, which previously was open rice fields with a lonely canal running through it, now has been converted into a regular city and one of the more active oil fields in the coastal zone of Texas. Now that the field has developed into major importance the new town of Monroe has sprung up with a large number of supply stores, cafes, barber shops, dry goods establishments, churches, etc.

Early Development

Prior to bringing in the discovery well, Turnbull & Irwin had drilled a wildcat, Suddendorf 1, south-



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GREATER COLLAPSE RESISTANCE

HIGHER PULL-OUT STRENGTH

MORE FOR YOUR MONEY

HIGH YIELD CASING

LOWER-COST WELLS

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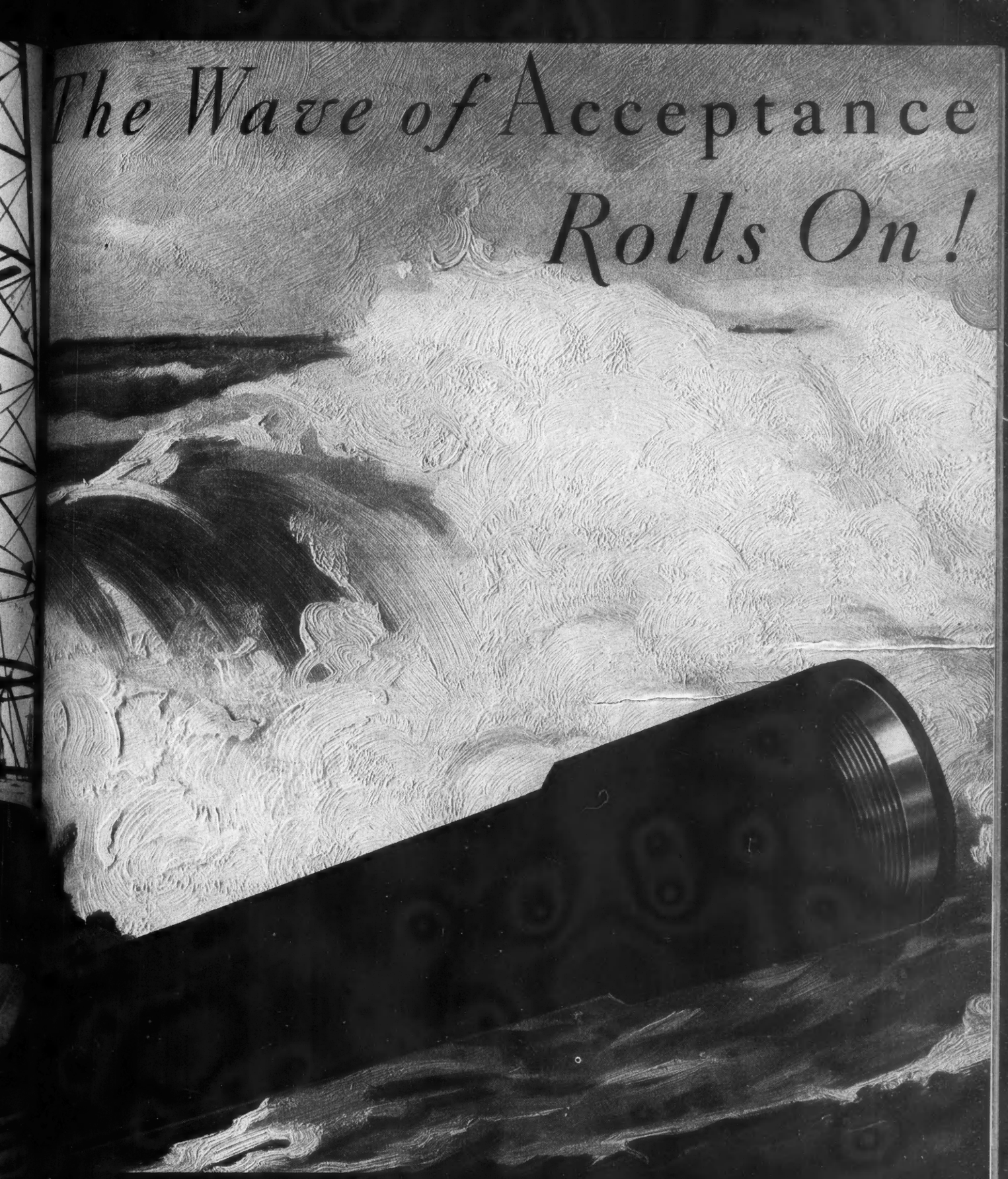

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TABLE 1

Geological Markers on Early Wells at Anahuac

COMPANY AND WELL	Discorbis	Heterostegina	Marginulina	Frio	Elevation
Turnbull & Irwin, Suddendorf 1	6439	6810	7162	7606	21
Humble Oil & Refining Co., Middleton 1	5940	6253	6580	6999	29
South Gulf Oil Corp., White 1	5798	6115	6450	6791	32
Glenn H. McCarthy, White 1	5890	6301	6605	6926	34
C. B. Bunte, Simon 1	5919	6484	6908	7370	44
Woodley Petroleum Co., Blanke 1	6240	6600	6930	7248	37

each of the town of Anahuac in the H. & T. C. Survey, Section 67, to 7937 feet. It was abandoned in August, 1934. Over 238 feet of solid sand was encountered in Suddendorf 1, but carried salt water. While the well was being drilled it created considerable excitement because it was running higher structurally than other wells in this area. The larger amount of sand found in the abandoned wildcat together with favorable geophysical work by Sun Oil Company, Shell Petroleum Corporation, Pure Oil Company, Amerada Petroleum Corporation, Yount Lee Oil Company and Humble Oil & Refining Company, started a large leasing campaign around Humble Oil & Refining Company's 14,000-acre block, which laid northeast of the abandoned hole. Approximately five months later Humble Oil & Refining Company announced location for A. D. Middleton 1. After this well came in, South Gulf Oil Corporation announced location for R. M. White 1, Luke Bryan Survey, 7½ miles northwest of Middleton 1. The hole was drilled to 7114 feet and encountered over 200 feet of solid sand but salt water was found in the Frio formation. See Table 1 for geological markers on early wells.

After R. M. White 1 was abandoned by South Gulf Oil Corporation, Glenn H. McCarthy and R. A. Mason took the same steps as Humble Oil & Refining Company and started drilling southeast of the abandoned hole and approximately 2½ miles north of Humble Oil & Refining Company's discovery well. It was believed that if R. M. White 1 carried 200 feet of solid sand and the south wells carried a good sand section that the 976-acre White lease, which Glenn H. McCarthy, R. A. Mason and associates owned, might carry oil in the Frio sands. Those more informed on salt domes gave R. A. Mason's lease little chance to produce because it was not believed that oil fields in the salt dome belt would cover areas as large or nearly as large as Conroe. This theory, however, was found to be erroneous because the R. A. Mason lease did produce and from the same sand as Humble Oil & Refining Company's A. D. Middleton 1. Furthermore the extension well ran about normal structurally with the discovery well.

Development After the Discovery Well

Following the discovery of flush production in Humble Oil & Refining Company's A. D. Middleton 1, the development of the field started in a small way around the discovery well. Operators were only making offset locations due to the fact that it was not known just how big the field would be. Geophysical work showed the area to be of irregular size. It was not anticipated that it would be the largest field in the salt dome belt and second to that of Conroe in size. Subsequent drilling southward from the discovery well showed this area was barren and that the discovery well was only a few thousand feet from the edge of the field. July 21, 1935, Glenn H. McCarthy and R. A. Mason brought in White 1, 2½ miles north of the discovery well, flowing 50 barrels of 38 gravity oil per hour from Frio sands. When this well was brought in it proved up acreage for Sun Oil Company, Gulf Oil Corporation and Humble Oil & Refining Company, and for the first time indicated Anahuac covered a large area.

Several weeks before the discovery well was brought in R. A. Mason had taken the 976-acre R. M. White lease in the J. McGahey Survey and approximately 1,200 royalty acres in the adjacent area. This area was condemned by major oil companies and R. A. Mason went to Boston to interest eastern capital in the play. It is reported that he sold a one-half interest in the area for $30,000 to David B. MacDaniel, George Tyson and Redington Fiske, all of Boston, to drill a well. However, before the transaction was completed, David B. MacDaniel, who is a geologist, came to Anahuac and worked the area and took into consideration the wells that had been drilled in that part of the country, and announced the location for the extension well. Later R. A. Mason contacted Glenn H. McCarthy and arranged for the drilling of the 2½-mile extension test.

After Glenn H. McCarthy and R. A. Mason completed White 1 it was generally believed that Anahuac would be as large as Conroe in proven acreage. C. B. Bunte staked a location for Simon 1, 4½ miles northeast of White 1 in the T. & N. O. Survey, Section 33. This well was drilled to 7788 feet before it was abandoned. The wildcat cored sands from 7370 to 7554 feet and from 7560 to 7741 feet, but like other outpost tests, carried salt water in the Frio formation. While C. B. Bunte was drilling Simon 1, Woodley Petroleum Company made a location for Blanke 1, H. & T. C. Survey, Section 41, approximately 1¾ miles northeast of Glenn H. McCarthy and R. A. Mason's White 1. This well was drilled to 7452 feet and had salt water sands from 7248 to 7256 feet and also down to 7452 feet.

Before the larger development program started at Anahuac, Humble Oil & Refining Company spent several hundred thousand dollars for acreage in the northeast direction from Glenn H. McCarthy and R. A. Mason's White 1 and around Woodley Petroleum Company's dry hole and C. B. Bunte's abandoned test. In fact the operators purchased a majority of the one time choice properties. Later after Glenn H. McCarthy and R. A. Mason completed White 1, Humble Oil & Refining Company purchased a half interest in the eastern portion of the 976-acre tract for a large cash consideration and oil payment. Later the company purchased one-half interest in the western portion of the 976-acre tract and received operating control of the property, and giving Humble Oil & Refining Company 86.30 percent of the proven acreage at Anahuac.

The largest price paid for one acre at Anahuac was when the three companies purchased for $45,000 an acre located in the southwest corner of H. & T. C. Section 48, on Gulf Production Company's 640-acre lease. Zeni Oil Company procured a lease on this acre from the Anahuac School District and had a drilling permit from the railroad commission. A deal

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COMPANY
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ON PAGES 683 to 702

TABLE 2

Analysis of Acreage, Number of Wells, and Production, Anahuac Field, January 1, 1937

ACREAGE DATA	
Producing acreage	3,000 ac.
Additional proven acreage	2,550 ac.
Total proven acreage	5,550 ac.
WELL DATA	
Number of oil wells completed	142
Number of gas wells completed	2
Number of abandoned holes	11
Total number of wells completed	155
Number of wells flowing oil	139
Number of wells shut in or being worked over	3
Number of wells on artificial lift	0
Probable number of oil wells	142
Estimated number of wells to be completed in present limits of field, considering 20-ac. spacing	128
Total number of wells completed January 1, 1937	155
Estimated number of wells to be completed at Anahuac	283
Average well spacing per 155 wells	19 ac.
Average well spacing per oil well (139 wells)	20½ ac.
PRODUCTION DATA	
Daily allowable January 1, 1937	8,800 bbls.
Daily average production January 1, 1937 (139 wells)	8,750 bbls.
Production in 1935	363,500 bbls.
Production in 1936	2,584,000 bbls.
Total cumulative production	2,947,500 bbls.
Average cumulative production per well	21,205 bbls.
Average daily production per well on January 1, 1937	61.5 bbls.
Average recovery per acre, 20-ac. units drilled (3,000 ac.)	983 bbls.
Average recovery per acre proven (5,550-ac.)	531 bbls.
Estimated ultimate average recovery per proven acre	46,300 bbls.
Estimated ultimate recovery per acre foot	770 bbls.
Average thickness of oil sand	60 to 80 ft.
Average thickness of gas sands	80 to 100 ft.
Average daily initial production per well through ¼-in. choke	706 bbls.
Combined daily initial production for 139 wells through ¼-in. choke	99,134 bbls.
Estimate ultimate recovery of Anahuac	257,000,000 bbls.
Total cumulative production January 1, 1937	2,947,000 bbls.
Indicated remaining reserve	254,052,000 bbls.

was made with Gulf Production Company, Sun Oil Company and Humble Oil & Refining Company participating, for the purchase of this acre. Sun Oil Company paid a quarter, Gulf Production Company paid a quarter and Humble Oil & Refining Company paid the remaining half for the acre. If the acre had been drilled it may have caused Sun Oil Company to drill two wells, Gulf Production Company two wells and Humble Oil & Refining Company to drill four wells. The lease carried a drilling obligation and for this obligation, $22,500 was paid to the owner in fee.

Humble Oil & Refining Company was the largest buyer of leases in the district after the discovery well came in. Acreage on the edge of the field brought as high as $1,000 per acre to be paid in cash and oil. Royalty also was at a premium when the first well was brought in.

After completion of Glenn H. McCarthy and R. A. Mason's White 1 the drilling program started on a larger scale because more operators had entered the field. White 1 proved up 500 acres for Sun Oil Company and a small amount of acreage for Gulf Oil Corporation to the east. Sun Oil Company immediately started offsetting Humble Oil & Refining Company and R. A. Mason's wells to the south. However, the drilling boom at Anahuac was not as large as Conroe because there were not as many operators.

Meanwhile, Humble Oil & Refining Company made locations surrounding the discovery well and completed these tests. Humble Oil & Refining Company started development in the northeasterly direction by staking Engles 1. This well later proved to be a commercial producer and aided materially to the size and development of Anahuac. The well was normal with the discovery well on the geological markers. After the well was completed a large leasing play started in the northeasterly direction.

Listed below are the wells that extended the field:

1. Glenn H. McCarthy and R. A. Mason's White 1, 2½ miles north, made 50 barrels of pipe line oil per hour from Frio sands at 7054 feet;

2. Humble Oil & Refining Company's Engles 1, H. & T. C. Survey, Section 50, made 31 barrels per hour through a quarter-inch choke from Frio sands at 7085 feet and extended the field over a half mile northeast;

3. Humble Oil & Refining Company's Boyt 1, H. & T. C. Survey, Section 44, made 706 barrels daily through a quarter-inch choke from 7129 feet and extended the field about a mile northeast;

4. Gulf Oil Corporation's Pommer 1, H. & T. C. Survey, Section 46, extended the field about ¾ of a mile east, when it came in making 691 barrels daily through a quarter-inch choke from 7129 feet;

5. Humble Oil & Refining Company's Lord 1, H. & T. C. Survey, Section 50, discovered a new producing sand in the Marginulina formation. This well showed that few wells low on structure and which carried salt water in Frio formation sometimes had producing sand in the upper sections around 6940 to 7040 feet.

Following is a list of wells that defined the producing area:

1. Humble Oil & Refining Company's Middleton 2, H. & T. C. Survey, Section 64, southwest side of the field was completed at 7126 feet. It found the structure low;

2. Humble Oil & Refining Company's Johnson 2, H. & T. C. Survey, defined the field on the east when it was abandoned at 7380 feet. Salt water sands were encountered from 7246 to 7257 feet;

3. Later Humble Oil & Refining Company decided to drill Middleton C-1, a mile east of Lord 2, H. & T. C. Survey, Section 88, and it was also abandoned at 7450 feet in salt water sands. Marginulina sands showed salt water from 7216 to 7225 feet;

4. South of production, Humble Oil & Refining Company's Broussard 10, H. & T. C. Survey, Section 63, was abandoned in salt water sands at 7988 feet;

5. Southeast of production approximately a mile, Humble Oil & Refining Company's Middleton 18, H. & T. C. Survey, Section 62, defined the field when it was abandoned at 7382 feet. Salt water sand was found in the Marginulina formation from 7177 to 7188 feet;

6. On the southwest side of the field, Humble Oil & Refining Company's Clark 3, H. & T. C. Survey, Section 57, cut a fault and was abandoned at 7212 feet;

7. Domestic Oil Company's Marshall 1, H. & T. C. Survey, Section 55, defined the field on the west side when it was abandoned at 7147 feet;

8. Sun Oil Company's M. White 1 on the north-

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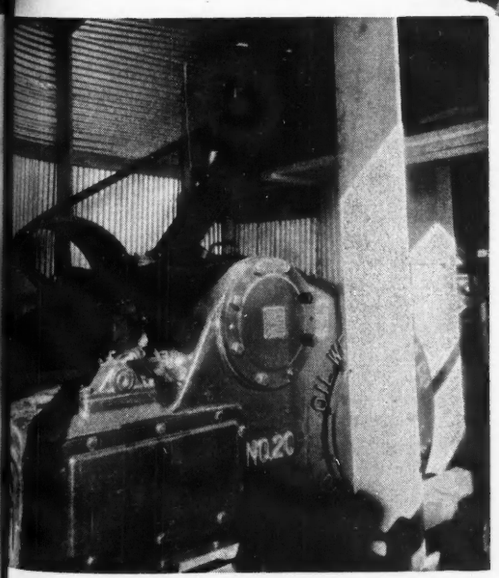

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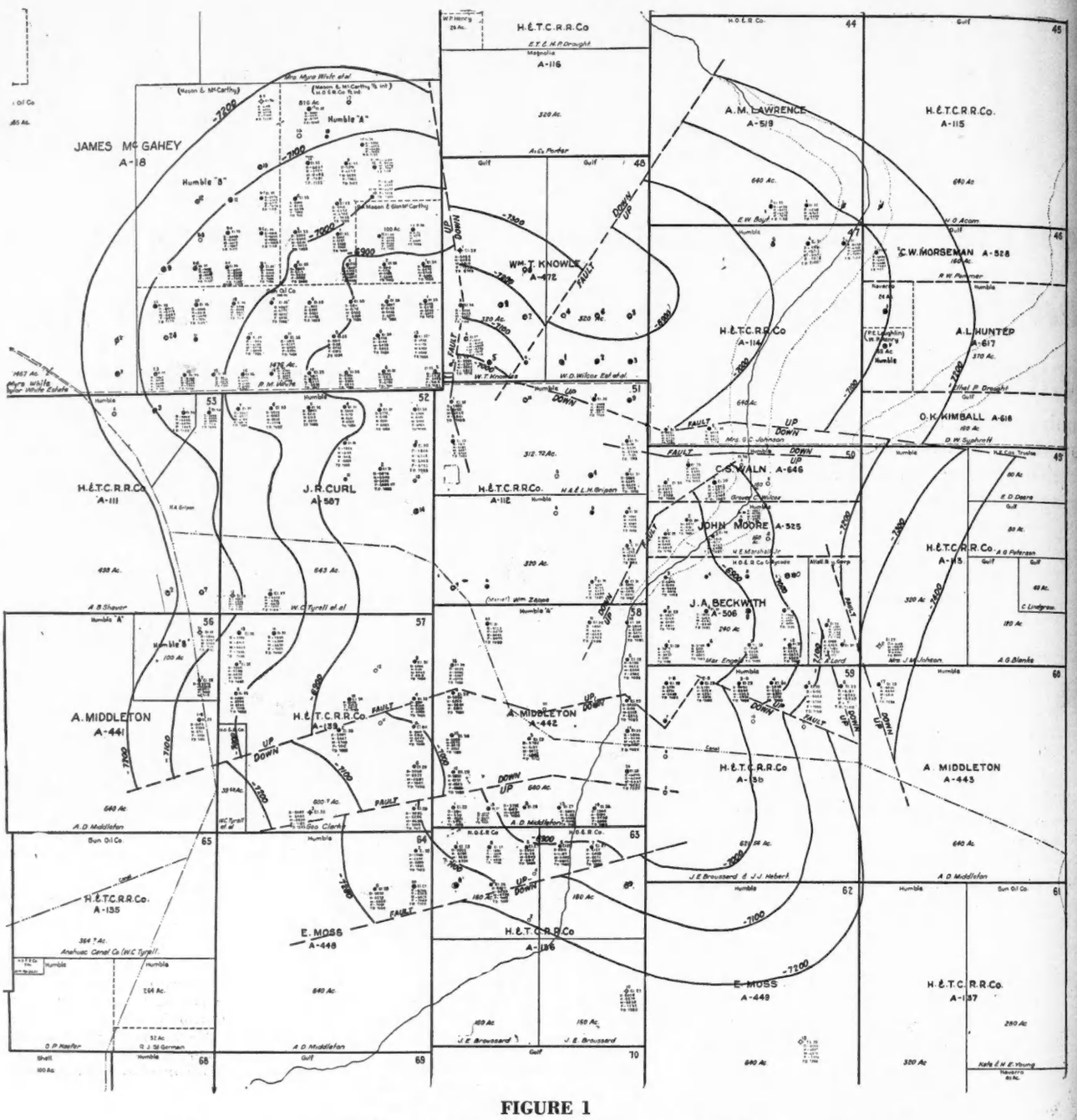

FIGURE 1

Anahuac contoured on the Frio formation at 100-foot intervals showing various faults interpreted by several geologists.

west side of the field was completed as producer at 7143 feet but was low on structure;

9. Humble Oil & Refining Company abandoned White B-5, J. McGahey Survey, on the north side of the field at 7224 feet and defined the field in this direction. This well showed evidence of production;

10. Gulf Oil Corporation cut a fault in Knowles 1, H. & T. C. Survey, Section 48, an east offset to a producer, and after drilling to 8749 feet it was abandoned. This is the deepest well drilled at Anahuac;

11. Gulf Oil Corporation's Acom 1, H. & T. C. Survey, Section 45, northeast side of field, was abandoned at 7230 feet in salt water sand after topping the formation at 7206 feet.

After the discovery well came in and during the balance of the year 1935, 41 tests were completed, and this total was increased to 155 by January 1, 1937. Of the 155 completions at Anahuac, 142 were oil wells, two gas and 11 failures. Conservative estimates places the potential well development at 283 or more. Based on the above data Anahuac's ultimate development is now 50 percent complete. (See Table 2.) Extensions, of course, would change the estimates as well as alterations in well spacing.

Anahuac is being developed in an orderly and conservative manner and is being allowed to flow according to the latest standards of conservation, and no doubt will be one of the more profitable fields in the Gulf Coast. Over 86.30 percent of the proven acreage is controlled by Humble Oil & Refining Company. Sun Oil Company has 9.19 percent of the area and Gulf Oil Corporation 4.51 percent (See

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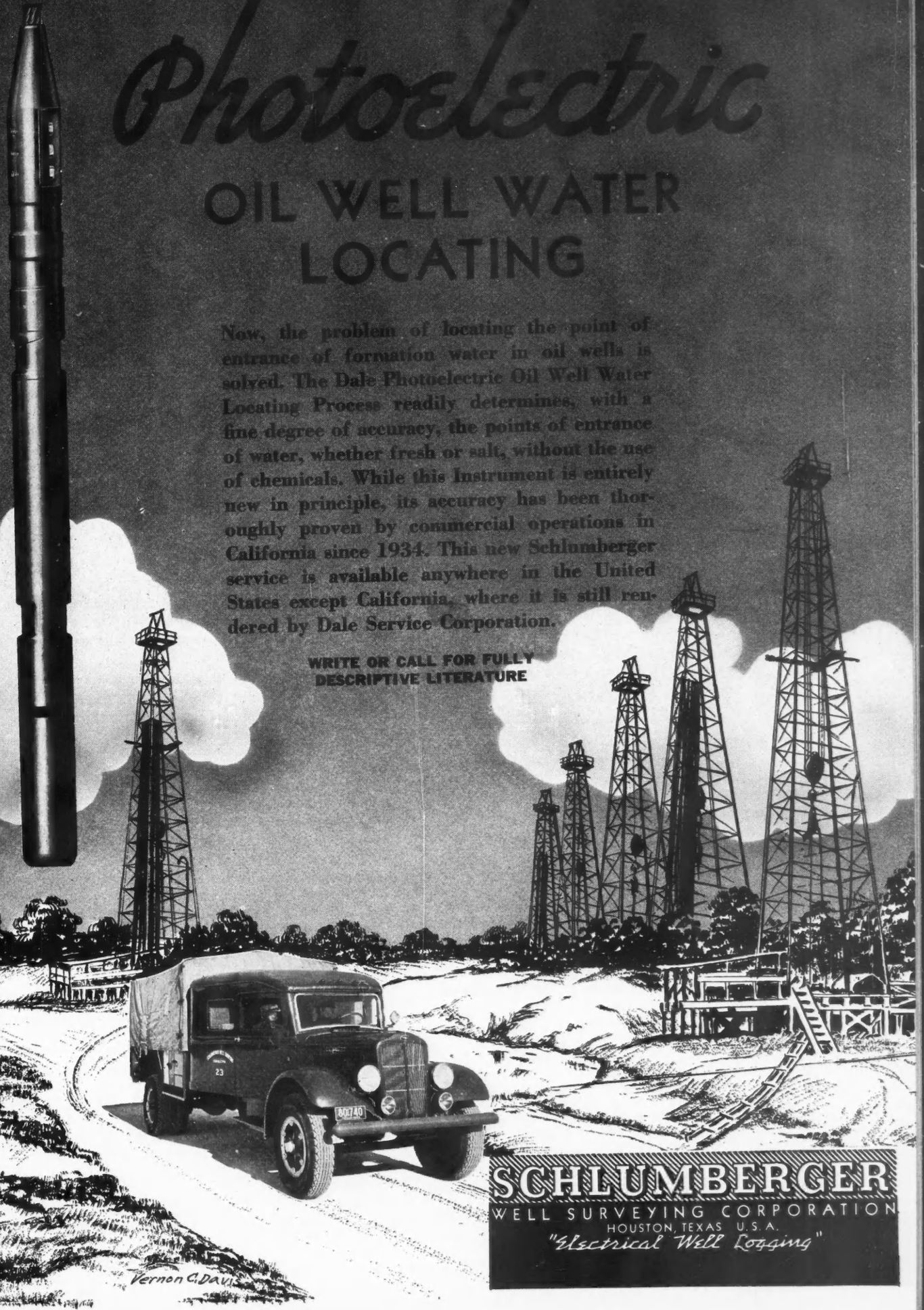

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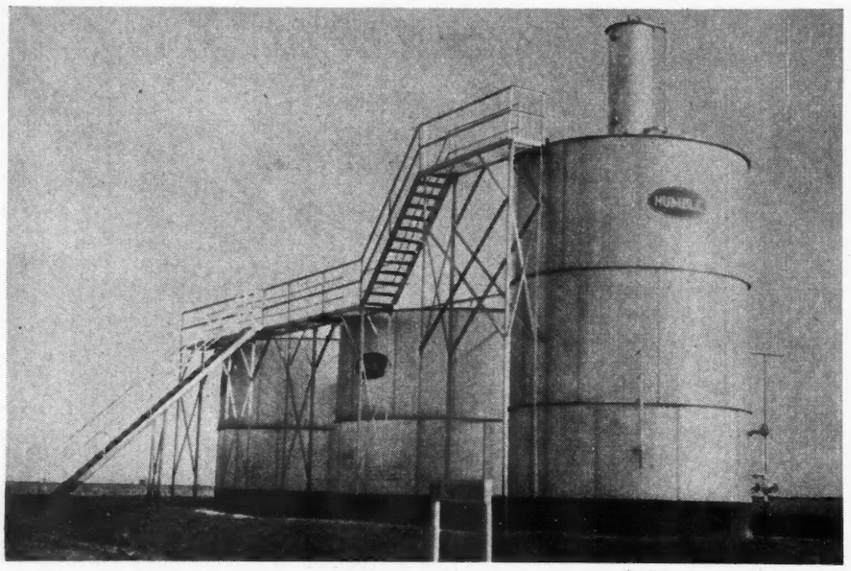


Lease tank battery at Anahuac

Table 3). The operators are promoting safe and scientific methods of drilling, well completion and other factors which will give the field an unusually long flowing life.

Anahuac with an estimated ultimate recovery of 257,000,000 barrels of oil and which had produced approximately 2,947,500 barrels on January 1, 1937, is averaging under proration 8800 barrels per day. With conservation of gas and scientific methods of operation the three operators have an estimated future producible reserve of 254,052,500 barrels, and considering the present rate of flow the field should have a life of over 70 years. During the latter part of 1936 the field was producing approximately 500 cubic feet of gas with every barrel of oil taken out of the reservoir.

Topography

The surface at Anahuac is a low topographic mound, which reflects the Middle and Lower Oligocene horizons. The elevation of Middleton 1, the discovery well is 29 feet, its offsets are 28 and 29 feet. The elevation of Middleton 3 in the center of Section 58 is 29 feet. The elevation of Engles 1 in the southeast corner of Section 50 is 28 feet.

The elevation of Humble Oil & Refining Company and R. A. Mason's White 1 is 34 feet while that of Johnson & Anderson's White 1, 2½ miles north, is 21 feet. Thus on a profile from Middleton 6 to Johnson & Anderson's White 1 there is a low dome rising from 28 to 34 feet, then falling from 34 feet to 21 feet. From Johnson & Anderson's White 1 with 21 feet elevation, there is a rise to the Hankamer-Winnie road, which has an elevation of 35.6 feet, or practically 15 feet higher. Therefore, the surface expresses the syncline on the north as well as the dome on the south.

A similar low topographic high is expressed in the east and west profiles. The elevation of Anahuac village is 21.5 feet; at the fork of the Anahuac-Devers road the elevation is 22.52 feet, or practically level for 3 miles. The elevation of the southwest corner of the James McGahey Survey is 26.5 feet, or a rise (coming up on structure) of 4 feet in 1½ miles. The elevation at the southeast corner of the James McGahey Survey is 35 feet, or a rise of the crest of the dome of 8½ feet in 2½ miles. From here to the culvert over the north fork of Double Bayou, approximately 2½ miles east, the surface falls to 24 feet, or a drop of 11 feet in 1½ miles. Thus on the east-west topographic profile a rise from the syncline west of the R. M. White lease in the James McGahey Survey, from 22 feet to 35 feet, or 13 feet to the crest of the structure in 4 miles, then a drop of 11 feet in 1½ miles. This surface reflects perfectly the top of the Frio gas sand. Anahuac field is drained by rice canals, an artificial drainage ditch and wet weather bayous into Galveston Bay.

The north fork of Double Bayou cuts around this relatively slight topographic high, while the south fork of Double Bayou starts in the north central part of the James McGahey Survey, runs south and west around the topographic high through the structural syncline on the west, then courses south, flowing into Galveston Bay.

On the north and west, Whites Bayou flows due south from Liberty County. It crosses the Liberty-Chambers County line at an elevation of 32.6 feet, flows southeast crossing the Hankamer-Winne road ½ mile east of Hankamer, at an elevation of 29.53 feet, or a fall of 3 feet in 2½ miles. This stream continues south and flows a little south of the northwest corner of the James McGahey Survey and when approaching the Anahuac uplift, turns west into the synclinal trough, thence flows northwest into Turtle Bay.

Barrows Branch rises just east and north of the intersection of the Devers-Winnie roads from the town of Anahuac. It follows the synclinal trough to the west of the Anahuac uplift and flows north into Whites Bayou.

Stratigraphy

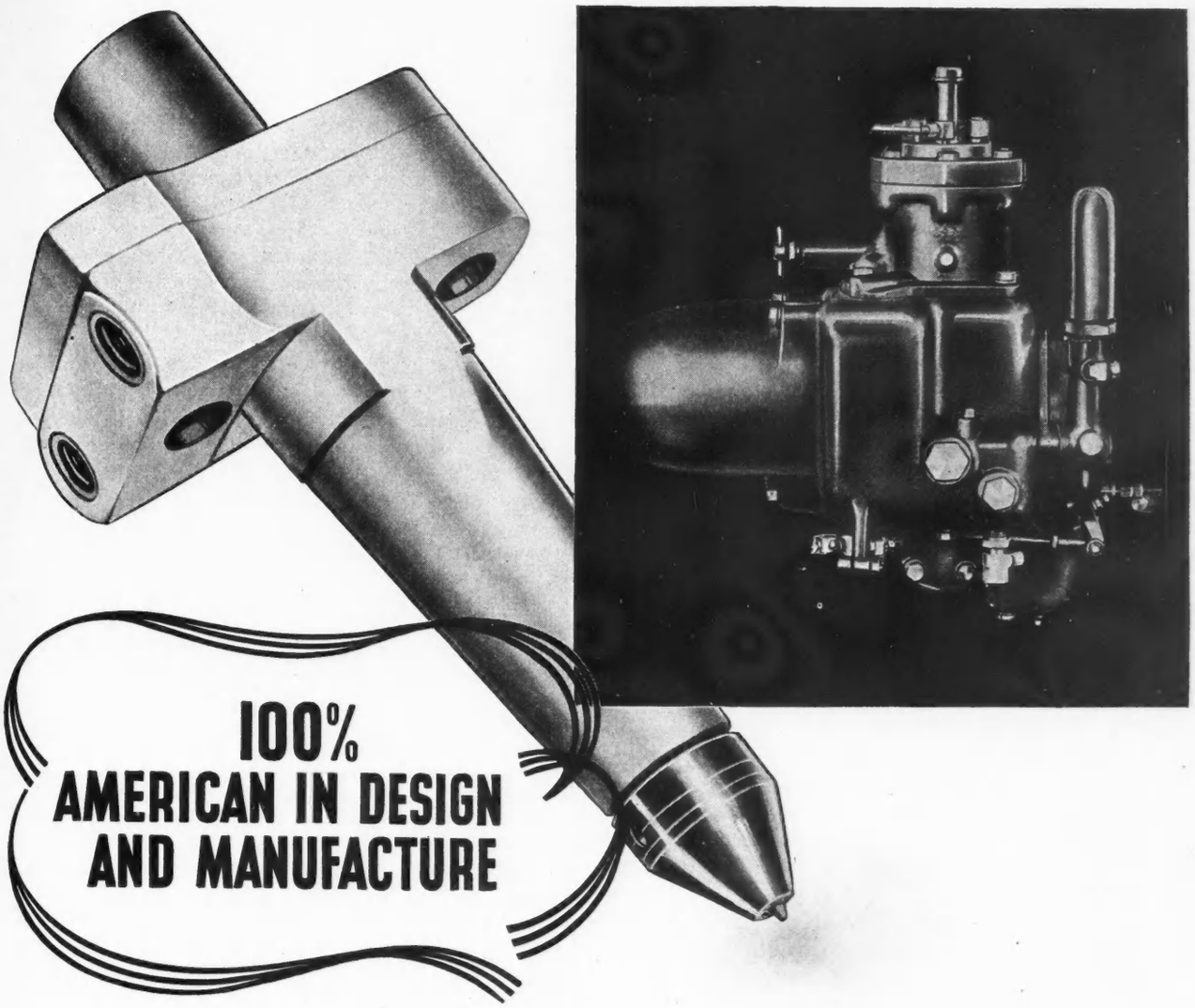
The surface formation at Anahuac is Beaumont Clay of Pleistocene age, a very plastic, poorly bedded clay with sandstone lentils. The Beaumont features the flat coastal Texas plains from the Sabine River to the Rio Grande. The average thickness of this formation at Anahuac is around 700 feet.

Below the Beaumont the next formation is the "Lissie" and "Goliad" sands, gravels and boulders of Pleistocene and Pliocene age, which are an average of 800 feet thick.

TABLE 3

Analysis of Acreage by Companies Operating at Anahuac Field, January 1, 1937

COMPANY	Total Proven Acreage	Percentage of Total	Total Producing Acreage	Percentage of Total	Additional Proven Acreage	Percentage of Total
Humble Oil & Refining Co	4790	86.30	2390	79.67	2400	94.11
Sun Oil Co	510	9.19	510	17.00	.....	.....
Gulf Oil Corp	250	4.51	100	3.33	150	5.89
Totals	5550	100	3000	100	2550	100



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The Lissie and Goliad surface beds extend from the Beaumont-Lissie contact south of the Southern Pacific railroad in Liberty County, north to the Hockley escarpment, a distance of 50 to 60 miles. They average 30 miles wide, paralleling the Gulf across Texas and Louisiana. They are usually about 50 miles from the coast. The Lissie and Goliad are an average of 60 percent sandstone, 20 percent clay and 20 percent gravels and boulders.

The presence of Lissie-Goliad formation makes it necessary to use 9⅝-inch surface casing around 1500 feet, to keep gravel and boulders out of the wells. No production is obtained in these formations, either in Texas or in Louisiana.

Under the Lissie-Goliad formation is the Lagarto clays. These clays average around 2100 feet thick. They are easily and rapidly drilled. They are an average of 75 percent marl, 15 percent sandstone lentils, and 10 percent silt, and contain about 2 percent minerals, such as Hematite, Ilmenite and Magnetite.

The Oakville of Miocene age is encountered next and it averages around 800 feet thick at Anahuac. The Oakville is productive in practically all the shallow or intrusive domes in the Gulf Coast area. It is of importance to note its productivity in areas near Anahuac; at Saratoga, High Island, Hankamer, Goose Creek, Fannett and Esperson. The sands are also productive at Raccoon Bend and Manvel. At present about ⅛ of the Gulf Coast production is from the Pliocene-Miocene (Lagarto and Oakville), with their 40 percent sandstone, 20 percent marl, 30 percent clay, five percent gravel and five percent shell content.

The strata of the Pliocene-Miocene formations at Anahuac are little if any affected by the underlying structure. These beds are not faulted, so with little or no dip, there is no reason to expect accumulation. There is a small gas show in some wells, but no commercial production.

The Catahoula formation comes next at Anahuac and is the top of the Oligocene formation. These beds average 400 feet thick in the Anahuac area and consist of tuffaceous clays, shales, cross bedded sandstones, tuffs and pyroclastics. They are characterized by petrified trees, leaves and stems. They contain volcanic glass, opal, fullers earth and Bentonite. The beds are 60 percent pyroclastics, 10 percent sandstone and 20 to 30 percent sandy clays. They are not productive.

The Marine or Middle Oligocene is found about 1100 feet thick at Anahuac. These beds take their names from the fauna of their limestones which are restricted to these particular horizons. The Marine Oligocene formation contains angular and subangular quartz deposits, forming sandstones which on structure are usually productive; massive crystalline limestones formed from coral reefs and gray calcerous clay.

Discorbis zone is from 100 to 300 feet thick at Anahuac. Its sandstones are productive at Orange.

Heterostegina zone averages from 200 to 420 feet thick in the area. It is designated by drillers as the "blue lime."

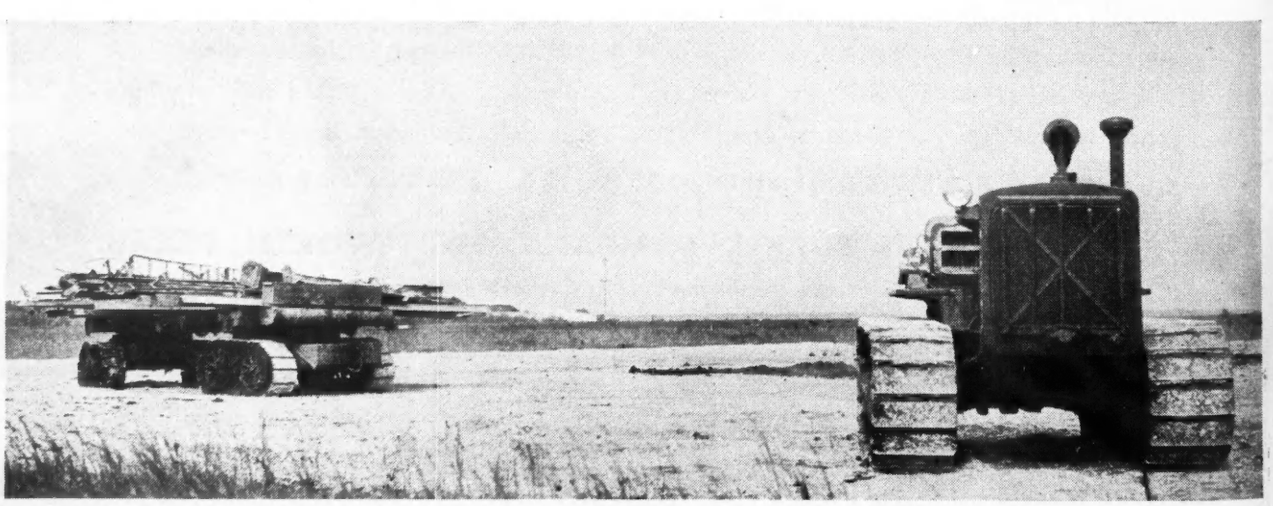
Marginulina is the lower of the three limestone zones of the Marine or Middle Oligocene. This zone is characterized by this species of fossil in the Texas and Louisiana Gulf Coast salt domes. This stratum consists of blueish gray, calcareous clay, containing layers of calcareous and non calcareous fine grained sandstone and a small percent of glauconite. Prolific production is found in several fields along the Gulf Coast from this formation. The three zones do not produce at Anahuac, as in this area the beds contain no large amount of sandstone. They serve as an impervious cap over 1000 feet thick and prevent migration upward of both oil and gas.

The productive horizon at Anahuac is the Frio immediately under the Marginulina limestones. These beds at Anahuac, as in other fields, are from 300 to 600 feet thick. They have been thoroughly explored in the Anahuac area, especially in off-structure wells.

The Frio beds average 95 percent sand, 4 percent sandstone and one percent concretions. The sand grains of the Frio are sub-angular to angular and range from 1/6 to ¼ a millimeter in diameter, (approximately 7/10,000 to 1/1000 of an inch).

There are no outcrops of stratigraphic exposures in the Anahuac area. The surface is a monotonous prairie intersected by sloughs, decadent bayous, drainage and irrigation canals. The surface was principally cultivated for rice.

[*To be continued*]



Tractors of this heavy type are required to move equipment at Anahuac. The surface is plastic, poorly bedded clay.

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Discovery Rates of Oil-Finding

[*Continued from page 18*]

inclusive. The year 1936, again, although it is not included in the preceding tables, appears now to have yielded smaller total discoveries even than 1935, despite feverish activity in exploration. In the light of this evidence, the depression, alone, begins to appear inadequate as an explanation for the slump in finding.

Moreover, when one analyzes the methods by which our discoveries have been made, and learns that our methods of finding oil have been gradually changing, and that our use of the old established methods seemingly reached the point of diminishing returns about the time our discovery rate began to fail, the coincidence at once makes obvious another possible factor in our retarded discovery rate. Our persistence in searching for deeper oil in the regions already proven for production has forced up to rely more and more exclusively on geophysics as a guide to finding, as our older methods failed us. Geophysics alone have not as yet been equal to the task of finding as much oil as all our older methods combined used to find. And so discovery rates have declined.

Technique Needs Improvement

The conclusion would seem to follow that if we are to maintain our established record in rate of discovery, or even to find oil at a rate equal to the current rate of consumption, we must further improve our finding technique in the near future. Our recent efforts to this end have been directed toward the perfection of geophysical methods for determining structure at greater depth. But there is obviously a limit to the depth to which wells can be drilled. There is also a limit to the depth at which oil may be encountered even where structural conditions are favorable. This limit varies from one district to another, but many of our more deeply-buried structures have recently been proven to contain gas instead of oil. As we go still deeper this tendency is more manifest. It is clear that we cannot always add to our reserves of oil merely by drilling to greater depths.

Stratigraphic Method Promising

A. I. Levorsen, our retiring president (AAPG) a year ago, outlined a line of research more promising than deeper drilling as a means of improving our finding technique. He recommended geologic studies at once broader and more intensive than our old "structure hunting" methods for the purpose of discovering what he designates "stratigraphic" pools; that is, pools of the East Texas type, where the reservoir control results from stratigraphic or "shore line" conditions rather than from simple local deformation of the enclosing strata. Intensive studies in stratigraphy, sedimentary petrography, and paleontology, with the continued aid of geophysics, will become the working tools of this new technique. Such pools are often large, and, therefore, are worth finding, but it should be recognized that in the search for them the exploration must be carried out largely by the actual drilling of wells. Only the general locality can be indicated by the geologist or geophysicist, and within it the drill, through one test hole after another, must carry the exploration to completion.

If an active, deliberate search for stratigraphic pools is undertaken by the producing industry two reversals in recently established trends may be anticipated; namely, (1) the recently manifested decline in the number of dry holes per major discovery will be arrested or reversed; (2) the demand for the services of competent geologists, which has slackened recently in favor of geophysical exploration, will be quickened. Drilling in search of stratigraphic pools will amount, practically, to "core drilling" large areas to extreme depths. "Core-drill" holes are almost invariably dry holes, and to be most useful they must be supervised so closely by geologists as almost literally to be drilled by geologists.

Conclusions

In summary, it may be said: (1) Our discovery rate in oil-finding was rather uniformly accelerated as the industry expanded through the period subsequent to the year 1900 until, over the years 1926-1930, it reached a peak more than double our current rate of consumption. Thereafter it declined sharply until it averaged, over the next five years, only about 70 percent of our current rate of consumption. (2) This is true whether discovery rate be measured in terms of barrels of reserves found, or in terms of major oil fields found. (3) Geological exploration has been dominantly our most effective finding method in the past. It has been less effective over the past ten years than it was previously, and has definitely yielded leadership to geophysics over the last five years. (4) Whether the failure of the discovery rate to maintain its earlier pace is to be explained as an effect of the recent industrial depression, as is generally assumed, or by the inadequacy of our finding technique to cope with increasing difficulty of oil-finding, may be debatable, but the evidence supports the latter as a major contributing factor. (5) We now drill fewer dry holes per major discovery than we did formerly, but this trend may be arrested or reversed in future exploration. (6) Our proven reserves, now about 13 billion barrels, are probably adequate or even excessive, viewed solely as a reserve supply, but they should be maintained at their present level to permit of production in an efficient manner and at the same time at the rate necessary to meet consumption. (7) Our finding technique definitely needs to be strengthened. Merely finding structural traps at greater depths and drilling deeper wells to tap them, as we have been doing in recent years, promises too little to permit us to rely upon it alone. (8) The most likely means of improving our oil-finding accomplishment is embodied in Levorsen's suggestion, made a year ago, that we initiate an intensive search for "stratigraphic traps." (9) This enterprise, if adopted, may be expected to cause an increase in the ratio of dry holes to discoveries, and to quicken the demand for expert geological supervision. But it should accomplish its purpose; namely, the discovery of important additional reserves of petroleum.

MEN IN THE INDUSTRY'S NEWS

R. D. MONTGOMERY and **FRANK A. MORGAN** have been named manager of production and head of the exploration division of the production department respectively, according to President Charles S. Jones of the new Richfield Oil Corporation. Ralph W. Walsh was named general sales manager, and his chief assistants will be O. H. Muller and G. C. Noble. The new Ricfield Oil Corporation is a merger of the old Richfield Oil Company, Pan American Oil Company and Rio Grande Oil Company.

C. W. SANDERS, geologist, is temporarily with Shell Oil Company in California after having returned from a year's stay at The Hague. He expects to resume work on the Gulf Coast salt domes with Shell Petroleum Corporation in Houston later in 1937.

P. H. CURRY heads the list of officers of South Penn Oil Company who were reelected when stockholders held their annual meeting in Pittsburgh March 10. Other officers who will continue in their same capacities are F. J. Huffman and C. B. Turner, vice presidents; T. B. Judge, treasurer; John L. Hays, secretary; John E. Selden, assistant secretary, and Charles F. Stevenson, general manager.

S. F. SHAW, consulting engineer, is investing production methods in the Corpus Christi area.

A. E. CROCKETT of Jones & Laughlin Steel Corporation, Pittsburgh, was speaker at a joint meeting of the American Petroleum Institute, American Institute of Mining & Metallurgical Engineers, and the American Society of Mechanical Engineers, in Houston on March 17. He presented an address together with a motion picture on the manufacture of seamless steel tubular goods.

GEORGE M. VANDAVEER, JR., chief petroleum engineer, E. H. Moore, Inc., presented a paper on "Treatment of Crude Oil Emulsions" at the Tulsa Chapter of the American Petroleum Institute on March 18.

PERLEY A. BREWER, United Oil of Somerville, and Charles W. Moore, Oil Men's Service and Supply Company, were honored at a banquet given by fellow members of the Oil Men's Association of New England recently. Brewer retired after serving three years as president of the organization, while Moore was honored for outstanding organization work he carried on while a director.

D. AUSTIN LANE, secretary of the Oil & Gas Association of Alberta, Canada, and solicitor for Oil and Gas Shareholders' Association, predicted a pipe line to convey Turner Valley oil to the Pacific coast, a distance of about 1,000 miles, would become a reality within two years in an address to members of the Calgary Board of Trade last week.

D. H. EMERSON, field foreman for Pan American Production Company in Duval County, has been moved to Saxet to take charge of operations in Nueces County.

ROBERT S. KING, president and general manager of The Pennzoil Company for the past two years, has announced his resignation, effective April 1, to devote his time to development of large oil and ranch interests acquired during the past few years in Wyoming and in the Mid-Continent areas. King was interested in the producing branch of the industry before turning to marketing some years ago.

RUSSELL JOHNSON, Calgary, Alberta, Canada, has been named consulting geologist of Marine Petroleum, Limited, organized in Winnipeg last week to drill for oil in the Turner Valley field. Robert McKay, Winnipeg broker, heads the new company.

R. E. SHUTT, exploration manager, J. B. Leiser, regional geologist, and Sherwood Buckstaff, regional geologist, all of Shell Petroleum Corporation, Tulsa, left the city March 12 to attend the meeting of the American Association of Petroleum Geologists in Los Angeles, California.

A. N. GRIFFITH, formerly field engineer for Cameron Iron Works, Inc., Houston, resigned effective March 22 to accept a position with the production engineering department of Shell Petroleum Corporation.

SALVADOR MEDINA, petroleum engineer, Roberto Casas Alatriste, and Francisco Barba, attorney, all of Mexico City, recently were appointed the liquidating committee of Petroleos de Mexico, S. A., "Petromex," stockholders of which recently approved plans for liquidation.

K. L. SAPPINGTON, Shell Petroleum Corporation, Midland, Texas, has been elected chairman of the newly organized Permian Basin Chapter of the American Petroleum Institute Division of Production, Southwestern District. The chapter is a reorganization of chapters formerly at McCamey and Midland. Headquarters will be at Midland. Approximately 50 members have joined already. G. A. Poole, Gulf Oil Corporation, Odessa, Texas, was elected first vice-chairman. Second vice-chairman is H. L. Johnston, Continental Oil Company, Hobbs, New Mexico, and the third vice-chairman is Ben LeFever, American Maracaibo Oil Company, Big Spring, Texas. L. F. Shiplet, The Texas Company, Wink, Texas, was made fourth vice-chairman.

The following advisory committee was elected: One year term — Earl Griffin, Phillips Petroleum Company, Midland; F. E. Hatfield, Gulf Oil Corporation, Odessa; J. W. Jordan, Sinclair Prairie Oil Company, Midland; T. E. Keefer, Stanolind Oil & Gas Company, Wink; L. A. Neal, Landreth Production Company, Odessa; T. B. Sudderth, ME-Texas Supply Company, Hobbs; two year term — Glenn Bish, The Ohio Oil Company, Hobbs; W. E. Cunningham, Oil Well Drilling Company, Hobbs; W. T. Doherty, Humble Oil & Refining Company, Midland; Harvey H. Hardison. Standard Oil Company of Texas, Midland; J. K. Hufendick, The Texas Company, Wink; and H. B. Hurley, Continental Oil Company, Big Spring.

F. H. McGUIGAN, district geologist for Shell Petroleum Corporation in West Texas and New Mexico, with headquarters at Midland, Texas, has resigned to engage in consulting practice at Abilene, Texas. He will be succeeded by K. S. Ferguson, geologist in the company's San Antonio office.

T. E. WARD, New York, president of Oil Field Equipment Company, Incorporated, and chairman of the oil equipment export committee of the Oil-World Exposition, to be held in Houston October 11 to 16, inclusive, was a visitor in Houston March 16. He will sail from New York March 25 for South America.

DIED:

LEONARD A. BLUMBERG, a director of Major Petroleum Company, died suddenly of heart disease March 10 at his home in Philadelphia.

AUGUST BOND, 55, recognized as one of the best oil well shooters in the Pennsylvania fields, was killed in a nitro-glycerine explosion March 11. The explosion occurred as he was transporting 60 quarts for use in shooting a well on Bailey Brothers' lease near Neilltown. Bond had been employed by A. Cupler, Jr., Oil Well Explosives Company for 28 years.

R. B. ANDREWS, late director general of Romano Americana, Standard Oil Company of New Jersey's subsidiary in Roumania, was, following his death in January, the subject of the following comment in one of the Roumanian newspapers: "The Roumanian petroleum industry has lost one of its most distinguished members, the Romano Americana one of its most valuable and devoted employees. Fate has decided that Roumania, where he spent the happiest days of his life, shall keep him in her earth forever."

Andrews started with the Jersey organization 24 years ago in the Tulsa warehouse of Prairie Oil & Gas Company.

LUTHER P. KEAN, 50, Dallas oil operator, died March 12 following a brief illness while a guest of a San Antonio hotel. He stopped in the latter city while en route home from a business trip to Corpus Christi. He was credited with drilling a number of wildcats in East Texas.

FAY JEFFERS, 43, of Eunice, N. M., an official of Jeffers Oil Company, died March 11 at Midland, Texas, after being ill more than one month. He and a brother, O. R. Jeffers, Midland, operated through the above concern in West Texas and New Mexico. Funeral services were held March 13 at Oklahoma City.

EARL W. BRATTON, 43, employe of the Texas Pacific Coal & Oil Company for 14 years, died March 11 in a Fort Worth hospital from pneumonia.

TESCO engineers understand and appreciate the unusual demands made on steel by the Petroleum Industry, for it is in this Industry—fields and refineries—that most TESCO steel is used. In fact, four out of five oil tool manufacturers on the Gulf Coast build with TESCO steel castings. Reasons: TESCO is Jack of one trade, operating the only exclusive jobbing steel foundry in the South; modern equipment, operated by experts; rigid scientific standards of practice; and control of quality through constant chemical and physical analysis of both raw materials and the finished product.

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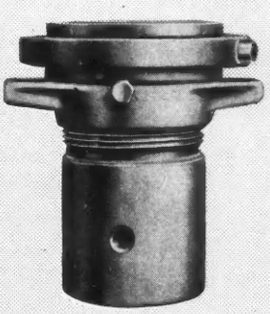
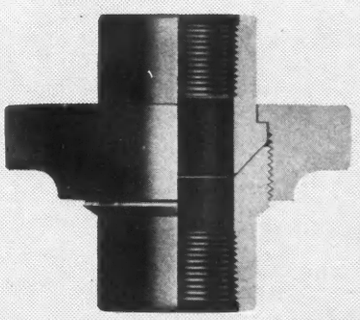
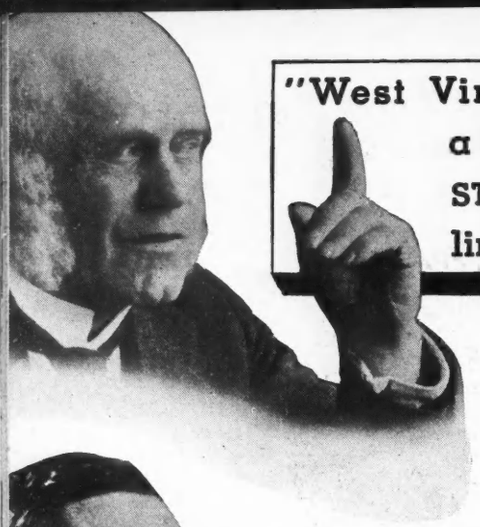


Baash-Ross Blowout Preventer

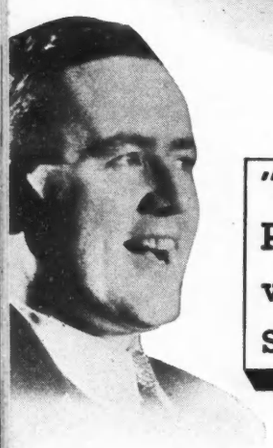


Weco Wing Union

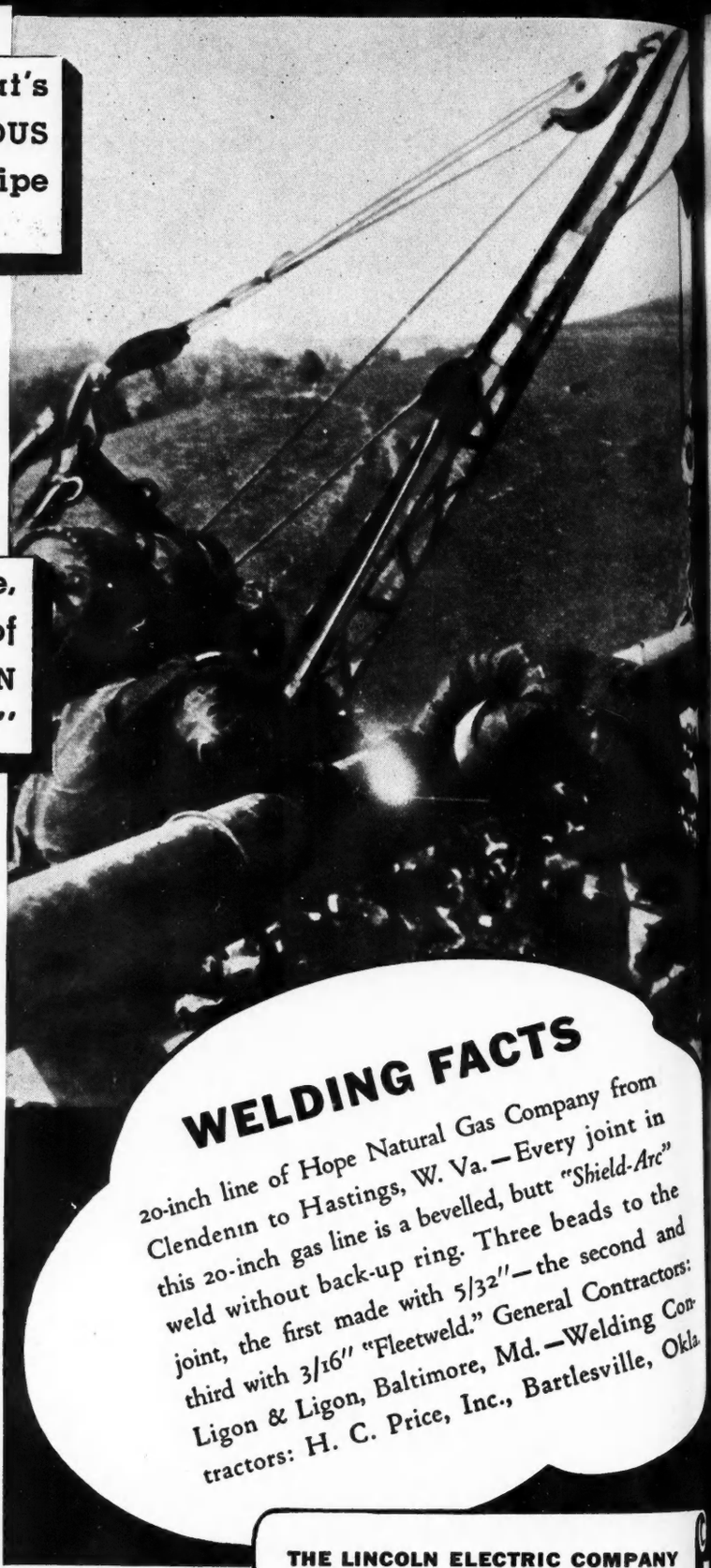
Atlas Tubing Head



"West Virginia—that's a MOUNTAINOUS STATE for a pipe line, Lad!"



"It's a Mountaineer line, Pop—but the problem of welding was in a PLAIN STATE! Here's why—"



"The problem of welding this 94-mile West Virginia line was simplified by the exclusive use of *'Shield-Arc'* welders and 'Fleetweld' electrodes. Because of the rough terrain, prohibiting roll-welding, every joint had to be welded *bell-hole style.* In other words, instead of having the pipe rolled underneath the welding arc, the arc was carried around the pipe.

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"So remember, Pop—even though the welding problem looks as high and unsurmountable as the W. Va. hills, it actually is the height of ease when you've lined up with THE LINCOLN ELECTRIC COMPANY." Largest Manufacturers of Arc Welding Equipment in the World.

WELDING FACTS

20-inch line of Hope Natural Gas Company from Clendenin to Hastings, W. Va.—Every joint in this 20-inch gas line is a bevelled, butt *"Shield-Arc"* weld without back-up ring. Three beads to the joint, the first made with 5/32"—the second and third with 3/16" "Fleetweld." General Contractors: Ligon & Ligon, Baltimore, Md.—Welding Contractors: H. C. Price, Inc., Bartlesville, Okla.

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Outlook Promising

GASOLINE UP; HEAVY BUYING IN MID-CONTINENT

THE past week brought various developments of a favorable nature for the oil industry, and the gasoline market improved, reflecting the promising outlook.

Heavy buying by major companies has virtually cleared the Mid-Continent of distress gasoline that had been accumulating for some time, and present tank car prices in Oklahoma and some other districts of the Mid-Continent are one eighth cent a gallon higher than a week ago.

The general outlook was appreciably brightened late last week by a statement of Chairman C. V. Terrell of the Texas Railroad Commission, indicating the commission probably would prescribe stricter crude production allowables for April, following the statewide proration hearing at Austin March 19.

High Texas allowables in recent months have been causing some additions to the country's stocks of crude and refined oils, but the contemplated stricter Texas allowables likely would restore the balance between crude production and market demand.

Crude Stocks Continue Increase

The extent to which crude oil has been going into storage is shown by the weekly reports of the Bureau of Mines. Those reports indicate that there were additions to the crude stocks every week from January 23 through March 6. Within that period of six weeks the nation's crude storage was increased 4,400,000 barrels, with Texas additions accounting for a large proportion of the total.

Gasoline Stocks at Peak

Additions to crude storage have resulted, moreover, from excessive output of the oil wells, and not from sub-normal activity of the refineries. In fact, plant operations have been comparatively high, as evidenced by the heavy additions to gasoline storage in recent weeks. The gasoline inventories have been expanding repeatedly in recent weeks to all-time peaks.

The latest report of the American Petroleum Institute showed that a new all time record for United States gasoline stocks was set at 81,236,000 barrels in the week ended March 13.

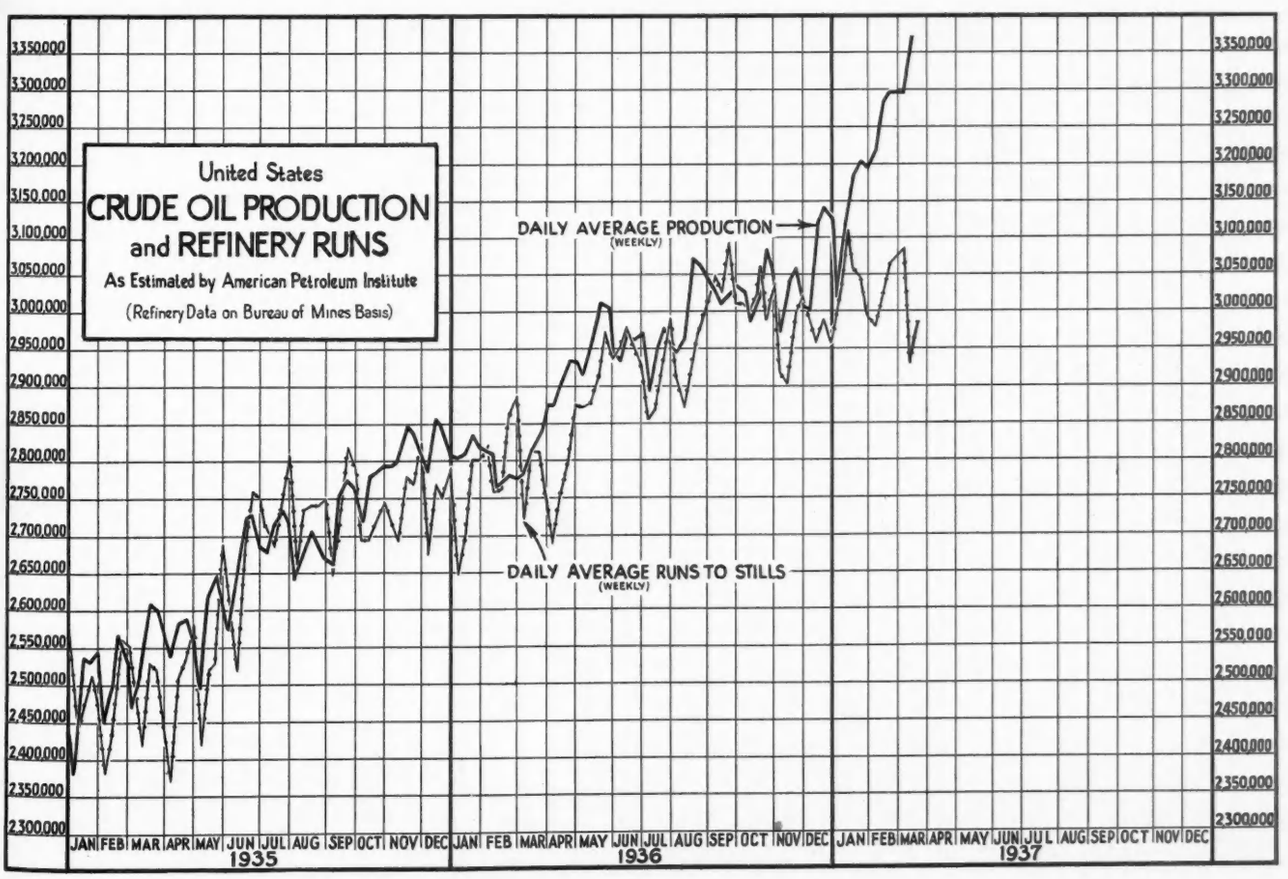
That level of gasoline storage was perhaps a little, although not much, higher than seems justified by the prevailing consumption of gasoline. The stocks on hand March 13 were 11.7 percent greater than those held a year previously. In its forecast for March, this year, the Bureau of Mines estimated that gasoline demand would be 9 percent higher than in March, last year.

Gasoline Prices Higher

Much of the ground that was lost by the gasoline market in preceding weeks was regained last week, when refinery prices were marked up one eighth cent a gallon generally in Oklahoma and in some instances in other sections of the Mid-Continent.

Prevailing tank car prices of U. S. motor gasoline f.o.b. Oklahoma refineries late last week appeared to be about as follows: 4¾ to 5 cents a gallon for 62 octane and below, 5¼ to 5½ cents for 63 to 67 octane, and 5¾ to 6 cents for 68 to 70 octane. All these prices were one-eighth cent better than those of a week before.

Corresponding prices in the Chicago market, also up one-eighth cent in some



cases, were: 4½ to 4¾ cents, 4¾ to 5 cents, and 5⅜ to 5¾ cents.

The third grade gasoline common on the East Texas market continued priced at 4¾ cents a gallon.

Kerosene and Fuel Oil

Kerosene prices at the refineries generally were unchanged. Prices at Oklahoma plants remained at 4⅛ to 4⅜ cents a gallon for the 41-43 water white grade and at 4¼ to 4½ cents for the 42-44 water white grade. Those minimum prices also prevailed in the Chicago market, although top prices in that area were one-eighth cent lower than in Oklahoma.

Milder weather of recent weeks has been reducing heating oil consumption, and supplies of the light oils consequently have been comparatively free. But the prices have remained steady. The heavy fuels, meanwhile, continue in active demand, and prices are firm.

In the Chicago market the No. 1 white burning oils were priced late last week from 4 to 4⅛ cents a gallon, and the No. 1 straw from 3¾ to 4 cents. The No. 2 straw was 3½ to 3¾ cents, and the No. 2 dark from 3⅜ to 3⅝ cents. No. 3 oils were 3¼ to 3½ cents a gallon.

For industrial consumption the heavier oils were priced at 95 cents to $1.05 a barrel for the No. 4 grade, 82½ to 90 cents for the No. 5, and 77½ to 85 cents for the No. 6 grade.

CRUDE PRICES

Complete table of prices paid for crude oil at the well in principal fields will be found on page 48 of The OIL WEEKLY, March 1. Hereafter this schedule will appear only in the first issue of each month except when changes are announced.

BOOST PREDICTED

Well posted sources claim time not ripe for increase

Los Angeles.—Predictions are being made frequently that crude prices will be increased within the next few days, or two weeks, in California. But those best posted are of the opinion that the present time is not ripe for an increase.

If crude prices are raised, marketers of gasoline will want to boost the going price for that product. And there is slightly more price cutting going on in Southern California at this period than there was a few weeks back. Two or three independent refiners are pushing their products on the market.

Premiums ranging from 15 to 30 cents per barrel are being paid for spot sales of Los Angeles Basin light crude. Heavy crude is still in fair demand, and the fuel oil market is holding up fairly well, with shipments by tankers to offshore markets good.

GAS FOR WISCONSIN

Texas Panhandle may be tied into several cities

Milwaukee, Wis.—The possibility of bringing natural gas into Wisconsin to serve domestic and industrial consumers in Milwaukee, Madison, Racine, Kenosha, Janesville, Beloit and other southern cities was under discussion here last week when it was learned that Northern Natural Gas Company had completed a survey which may lead to extension of its lines which now serve Des Moines, Iowa, and run north to Minneapolis.

Six years ago Natural Gas Pipeline Company of America, which has a line running to Chicago, obtained right-of-way for a line which would extend from Geneseo, Illinois, to Beloit, Wis. The depression delayed construction plans, but the company kept up to date its rights-of-way into the state.

Both possibilities, either one of which may bring gas from Texas and Kansas fields to Wisconsin, were discussed informally by delegates to the conference of the commercial and technical divisions of the gas section of the Wisconsin Utilities Association, which met here March 15-17.

It is estimated that a line by Natural Gas Pipeline from Geneseo to Milwaukee would entail an expenditure of $3,000,000. It would pass through Janesville, Beloit, and several smaller industrial centers, but extensions would be needed to reach the larger markets in Racine and Kenosha.

A line of Northern Natural Gas would probably enter Wisconsin at Dubuque, run northeast to Madison and then east through Watertown to Milwaukee. Similarly, extensions would be needed to reach Racine and Kenosha. Further extensions would serve a rich market north of Milwaukee on the Lake Michigan shore and in the Fox River valley. Construction cost of a line from Dubuque to Milwaukee is estimated at about $8,000,000.

Weekly Trends of United States Production and Stocks

(Figures from American Petroleum Institute, except crude stocks from Bureau of Mines.)

WEEK ENDED—	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	Gas & Fuel Oil Stocks (Barrels)
February 6, 1937	3,220,750	2,980,000	286,116,000	70,535,000	101,136,000
February 13	3,286,050	3,020,000	286,158,000	73,585,000	100,735,000
February 20	3,295,950	3,065,000	287,574,000	74,798,000	99,391,000
February 27	3,296,100	3,085,000	288,121,000	78,786,000	99,534,000
March 6	3,298,800	2,930,000	289,611,000	80,102,000	99,115,000
March 13	3,372,850	2,985,000	.....	81,236,000	98,964,000

Summary of Wells Completed in the United States Week Ending March 20, 1937

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total Completions, 1937	Total Completions this Date 1936
Alabama	....	....	....	....	.....	1	....
Arkansas	....	....	....	....	.....	13	22
California	18	15	....	3	8,330	257	193
Colorado	....	....	....	....	.....	3	1
Florida	....	....	....	....	.....	....	....
Illinois	6	5	1	....	143	11	4
Indiana	1	....	1	....	.....	33	63
Kansas	55	43	2	10	42,116	453	289
Kentucky	....	....	....	....	.....	48	24
Louisiana	11	8	....	3	3,176	145	202
Michigan	16	12	3	1	10,136	178	142
Mississippi	....	....	....	....	.....	5	1
Montana	....	....	....	....	.....	16	19
Nebraska	....	....	....	....	.....	....	....
New Mexico	13	12	1	....	56,914	145	94
New York	....	....	....	....	.....	3	....
Ohio	34	6	21	7	30	385	463
Oklahoma	56	39	4	13	65,712	625	558
Pennsylvania	11	2	5	4	3	31	....
Texas	242	183	5	51	233,162	2,920	2,408
Utah	....	....	....	....	.....	....	....
West Virginia	17	4	10	3	9	202	130
Wyoming	....	....	....	....	.....	20	8
Total this week	480	332	53	95	419,731	5,495	4,621
Total last week	520	335	47	138	441,782	....	....
Total to date	5,495	3,615	539	1,341	4,659,953	....	....

Comparison of Permits Granted for New Wells

STATE	Week Ending Mar. 20	Total this Mo.	Total this Year	Total this Date Last Year	1936 Year Total
Arkansas	....	8	20	17	103
California	25	81	283	174	1,054
Louisiana	2	37	177	243	1,107
Kansas	56	133	475	342	1,873
Michigan	21	55	192	119	762
Oklahoma	39	135	540	550	2,594
Texas	486	1,371	3,760	2,675	15,582
Total	629	1,820	5,447	4,120	23,075

Another New Peak

U. S. PRODUCTION UP 44,875 BARRELS TO 3,426,475 DAILY

UNITED STATES crude oil production again reached a new all-time peak in the past week, ended March 20, averaging 3,426,475 barrels daily. The crude oil output has been increasing steadily since the beginning of the year, having declined in only one week, and then only slightly.

Last week's production was 44,875 barrels a day greater than that of the previous week, and it was 267,475 barrels a day higher than the Bureau of Mines recommendation for average daily output in March.

This further increase in crude production occurred despite the fact output has been above market requirements for several weeks, resulting in addition of the excesses to above-ground storage.

Although this excessive production of crude has been causing anxiety in the industry, with unfavorable effects on the industry's markets, it has been indicated that a closer balancing of production with demand is in prospect effective April 1. A considerable part of the excessive output has been occurring in Texas, and the Texas Railroad Commission late last week indicated it contemplates prescribing stricter crude production allowables for April.

Oklahoma Has Big Increase

The increase in production last week resulted largely from a sharp rise in Oklahoma's output and from a smaller gain in Kansas. Production showed but small changes from the previous week in the other leading producing states, including Texas, California, New Mexico and Louisiana.

Oklahoma last week averaged 657,450 barrels daily, or 41,525 barrels a day more than in the previous week and 66,750 barrels a day more than the Bureau of Mines recommendation.

Kansas output was up 5,050 barrels at 188,325 barrels daily, and showed an excess of 10,325 over the federal allocation.

California registered a 1000-barrel increase, averaging 594,000 barrels daily. That was 23,100 barrels a day more than the Bureau of Mines allocation.

New Mexico output was up 100 barrels in averaging 103,200 barrels a day, which was 15,000 barrels a day above the federal allocation, although in line with the state allowable.

Texas production last week averaged 1,391,300 barrels daily, compared with 1,391,700 barrels a day the previous week. The new rate was 134,700 barrels a day above the Bureau of Mines suggestion, although in accordance with the state allowables.

Louisiana last week produced at the average rate of 242,200 barrels daily, showing a decrease of 2300 barrels from the previous week, and exceeding the federal allocation 2200 barrels.

Midland, Texas.—Anderson-Prichard Oil Corporation has purchased R. H. Henderson, et al's L. Daugherty 20-acre lease, located in the north portion of the Henderson field, Winkler County, with one completed well, for $31,250 cash. Lease embraces W½ S¼ NE¼ P.S.L. Section 33, Block 74, and the well was completed last October in dolomite lime at 3098 feet, or 227 feet sub-sea, for a high initial flow after acid, but is now credited with making 15 percent bs&w.

United States Crude Oil Production

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in Mar.)	ACTUAL PRODUCTION: BARRELS DAILY FOR WEEK ENDING March 20	March 13
TEXAS—			
Texas Panhandle	.....	74,500	74,200
North Texas	.....	67,600	67,800
West Central Texas	.....	31,700	32,300
West Texas	.....	208,200	205,400
East Central Texas	.....	119,600	119,700
East Texas Field	.....	454,500	453,700
South Texas	.....	226,800	231,200
Texas Gulf Coast	.....	208,400	207,400
Total Texas	1,256,600	1,391,300	1,391,700
OKLAHOMA—			
Oklahoma City	.....	155,250	141,750
Seminole Area	.....	131,700	134,875
Crescent	.....	18,175	12,950
Lucien	.....	13,750	13,500
Fitts	.....	92,075	89,675
Edmund	.....	36,125	23,475
Moore	.....	15,175	13,000
Others	.....	195,200	186,700
Total Oklahoma	590,700	657,450	615,925
KANSAS—			
Ritz-Canton	.....	5,400	5,475
Chase	.....	8,250	10,300
Hollow-Nikkel	.....	4,075	4,100
Sedgwick	.....	4,725	4,800
Burrton	.....	16,725	16,375
Lorraine	.....	5,700	5,150
Russell County	.....	27,475	25,475
Silica	.....	18,000	15,225
Others	.....	97,975	96,375
Total Kansas	178,000	188,325	183,275
LOUISIANA—			
North Louisiana	.....	69,100	68,700
South Louisiana	.....	173,100	175,800
Total Louisiana	240,000	242,200	244,500
ARKANSAS	28,500	27,500	27,300
CALIFORNIA—			
Long Beach	.....	61,000	61,500
Santa Fe Springs	.....	44,500	45,500
Huntington Beach	.....	37,000	37,000
Dominguez	.....	25,000	24,500
Inglewood	.....	13,000	14,000
Ventura Avenue	.....	34,000	33,500
Seal Beach	.....	9,500	9,000
Midway-Sunset	.....	67,000	68,000
Elwood	.....	9,000	9,000
Kettleman Hills	.....	77,500	77,500
Mountain View	.....	21,500	21,000
Playa del Rey	.....	9,500	9,500
Others	.....	185,500	183,000
Total California	570,900	594,000	593,000
MOUNTAIN STATES—			
Wyoming	42,200	53,100	52,400
Montana	14,660	15,400	15,800
Colorado	4,300	4,500	4,400
Total Rocky Mountain States	61,100	73,000	72,600
NEW MEXICO	88,200	103,200	103,100
EASTERN STATES	114,700	114,700	116,400
MICHIGAN	30,300	34,800	33,800
Total United States	3,159,000	3,426,475	3,381,600

Edited by
WM. V. GROSS, Associate Editor

Wave of Leasing

CANADIAN WILDCATS ON 2 ANTICLINES RESPONSIBLE

A wave of leasing activity swept over the extreme south of Alberta, Canada, last week following strikes made at Plains Petroleum Company's wildcat on Taber structure and the Sunshine Oils, Limited's wildcat on Del Bonita structure. Over 15,000 acres were covered, and a prospecting permit granted for an additional 10,240 acres. Applications were received for a total of 380 leases.

A short test of the Plains well at the close of the week, made immediately upon arrival of two 500-barrel storage tanks, indicated production between 200 and 250 barrels of 29 Baume gravity oil a day. Preparations are being made to swab. If this does not make the well flow continuously, it will be tubed. The strike was unexpected at its present level—3,212 feet.

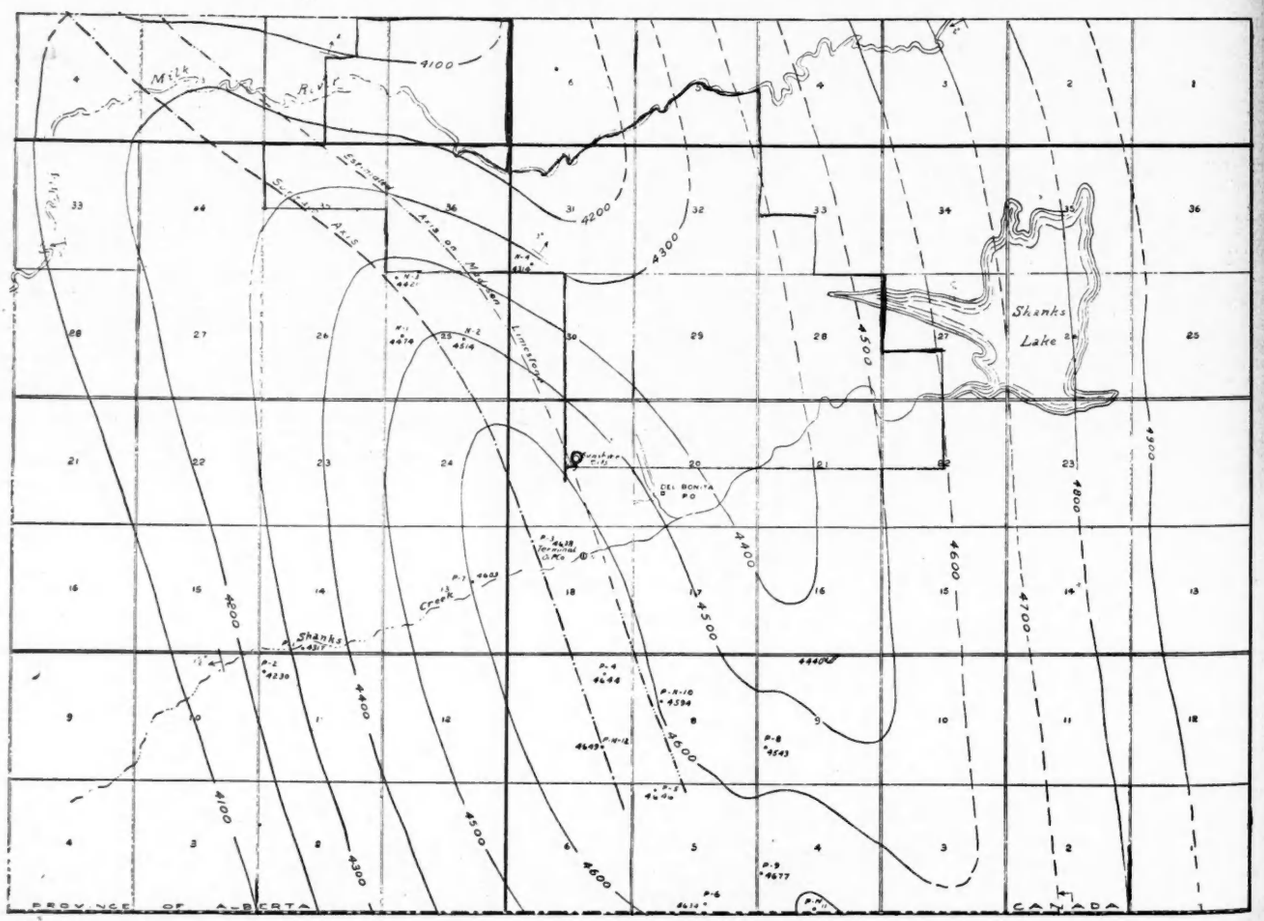
Shows 38 Baume Gravity Oil

The Sunshine well made a good showing of 38 Baume oil at 5,252 feet and is standing awaiting arrival of a liner from Okotoks. Because of the bad road conditions, the liner cannot be moved overland. Del Bonita is not on a railroad, and the liner is being routed by rail to Whiskey Gap from where it will go by truck to the lease. It is expected this week, after which the well may be deepened a few feet more.

Meanwhile, Westside Royalties' well in south Turner Valley, last to reach the Madison limestone, was maintaining production of 230 barrels daily. Newfold Royalties' well was still blowing as the week closed. The gas flow has increased from 1,750,000 to 2,250,000 cubic feet. The flow on the last blow-off was described as "very wet."

Plains Completion Cost Low

Importance of the Plains strike is indicated in the statement of Dr. J. O. G. Sanderson, Calgary, who located the well: "Wells can be put down to the producing sands at Taber for around $13,000," he



Joseph Irwin's contours of Del Bonita anticline on which Sunshine Oil Company's strike of last week in Canada is located. Contours show elevation of top of Fox Hills sandstone above sea level, based on surface and core drill data. Contour interval, 100 feet.

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said, illustrating the economy in operating in this area. Wells in Turner Valley cost from $120,000 to $150,000 to complete in the limestone.

The Plains and Sunshine strikes reduced drilling wildcat wells to seven: Elbow on Birch Ridge, Franco at Cardston, Arca and Ranchmen on Cayley structure, Banner on Sinclair, Hunter Valley on Hunter Valley structure and Roxana Petroleum on Kootenay Dome.

$3,000,000 for Equipment

An estimate that fully financed oil companies who have completed drilling plans in Turner Valley for the coming summer would be obliged to spend more than $3,000,000 in the purchase of oil drilling rigs, derricks and casing, was made here last week by W. J. Maughan, president of Union Drilling and Development Company, Ltd., following a study of announced operations. The figure does not include purchases by companies not yet fully financed. As no Canadian company manufactures drilling equipment, it will be imported from the United States.

Fred Manning, Oklahoma driller who was in Calgary last week, announced that $500,000 worth of equipment would probably arrive in Okotoks from Oklahoma by the end of the month. He was accompanied by C. P. McShane and J. Quinlan, drillers.

Pipe Line Into Arctic Circle

The first pipe line into the Arctic Circle is to be constructed this summer to aid in supplying Eldorado Gold Mines at Labine Point with fuel oil to carry on its development program. The line will be 8½ miles and provide a link in the water freight transportation of the oil from wells of Imperial Oil, 275 miles from the mine, and will make possible transportation without portaging past the Bear River Rapids. Storage tanks are also to be built.

While no additional taxes upon the oil industry were forecast in the provincial government's budget announced last week, the government is looking to oil production as a source of increased revenue. It is estimated that revenue from petroleum and natural gas royalties will total $250,000 for the fiscal year ending March 31, 1938, compared with about $150,000 for the previous year.

Parley Hits Snag

MEXICAN WORKERS' UNION THREATENS GENERAL STRIKE

Conversations between petroleum capital and labor and the Mexican federal government have again run into a snag with the threat of the workers' union that it will call a general strike as a protest against the companies' alleged wilful retarding progress of the talks, which have continued at such a snail's pace since December 11 that only 14 of the 186 clauses of the contract-law have been approved.

A statement signed by Huasteca Petroleum Company, Mexican Eagle Oil Company, Pierce Oil Company, California Standard Oil Company of Mexico, Mexican Sinclair Petroleum Company, Richmond Petroleum Company, Penn Mex Fuel Oil Company, Stanford Oil Company, and Consolidated Oil Company, says, in part:

Oil Companies Answer Charges

"Statements made by the petroleum workers' union, containing a threat of a general strike, are not very truthful regarding what they say concerning the conversations. The union blames the companies for the fact that after 52 days of discussions only 14 clauses have been approved. That charge is unjustified, for the conversations have been frequently interrupted: first, by the internal dispute of oil workers and tanker stevedores which provoked an unjustified strike of 24 hours, which caused the oil companies much loss, although they had nothing to do with the quarrel, which was purely among the workers; second, because the workers refused to participate in the conversations due to their unjustified and illegal objection to the companies being represented by lawyers at the talks, an action which not only suspended the conversations for a week, but made necessary the intervention of the chief of the labor department, to bring about resumption of the meetings.

"The companies represented at the meetings have the greatest interest that the conversations be completed as soon as possible, because attending these talks cost the companies more or less 2,500 pesos a day, or 75,000 pesos (about $22,000) a month, but the workers' delegates, besides their regular wages in full receive 10 pesos each a day for expenses. Furthermore, as the economic burden that will be imposed upon the companies as a result of the contract-law, their calculations for future work to develop their activities in general, will be in a situation of absolute uncertainty.

Say Union Claims Not True

"It is not true that the companies' representatives are seeking to establish in the contract-law economic conditions that are inferior to those existing for petroleum workers. These conditions are improved in various of the clauses that have been approved.

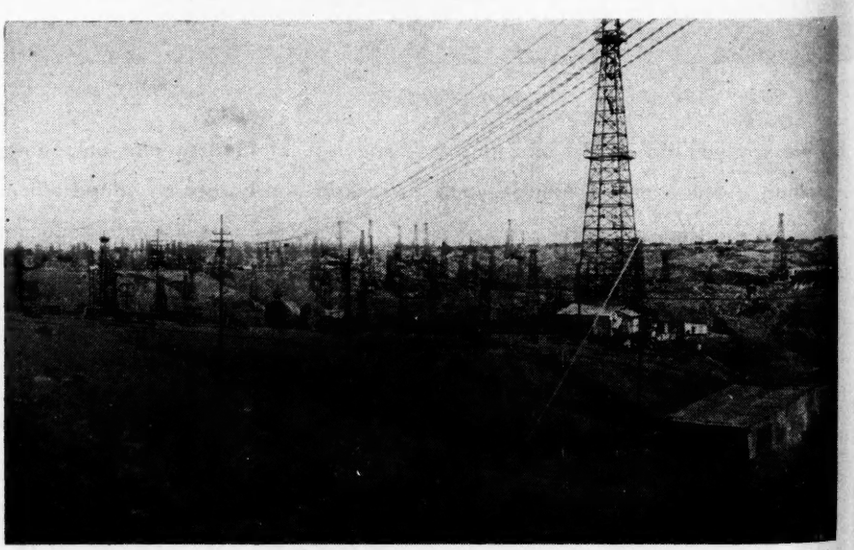
"At the beginning of the conversations, the companies representatives made it clear that the agreement it is desired to attain is one that shall apply to all petroleum employers and employees in Mexico. But the workers' union endeavored to limit the discussion to a contract for a determined group of companies and the union, thereby excluding other workers in the same industry from benefits of the agreement. The situation is precisely the opposite to that which the union presented in its statement. Authorities who have intervened in this matter have found that the tendency of the companies' representatives has been to obtain a complete and perfect unification of working conditions in the Mexican petroleum industry, by means of the contract-law which is the precise object of the conversations.

Delay Blamed on Labor Delegates

"Even though it is apparent to the workers' representatives that the propositions of the companies, besides being reasonable, provide an evident improvement in general conditions in contracts that are now in effect, the labor delegates raise all possible objections, thereby causing a considerable delay in the discussion of each clause.

"The workers' representatives are trying to make the public believe that the economic and social conditions of their fellows are so precarious that a general strike will be necessary unless their economic conditions are not improved by the companies. Nothing could be more false, for it is well known that the petroleum workers enjoy better economic advantages and privileges than do any other workers in this country."

Peril of the general strike was averted as a result of its intervention which induced the companies and the workers to agree to do all possible to accelerate the conversations and assure their smooth functioning, announced the labor department.



Yenangyaung field in Burma, one of the oldest in the Orient

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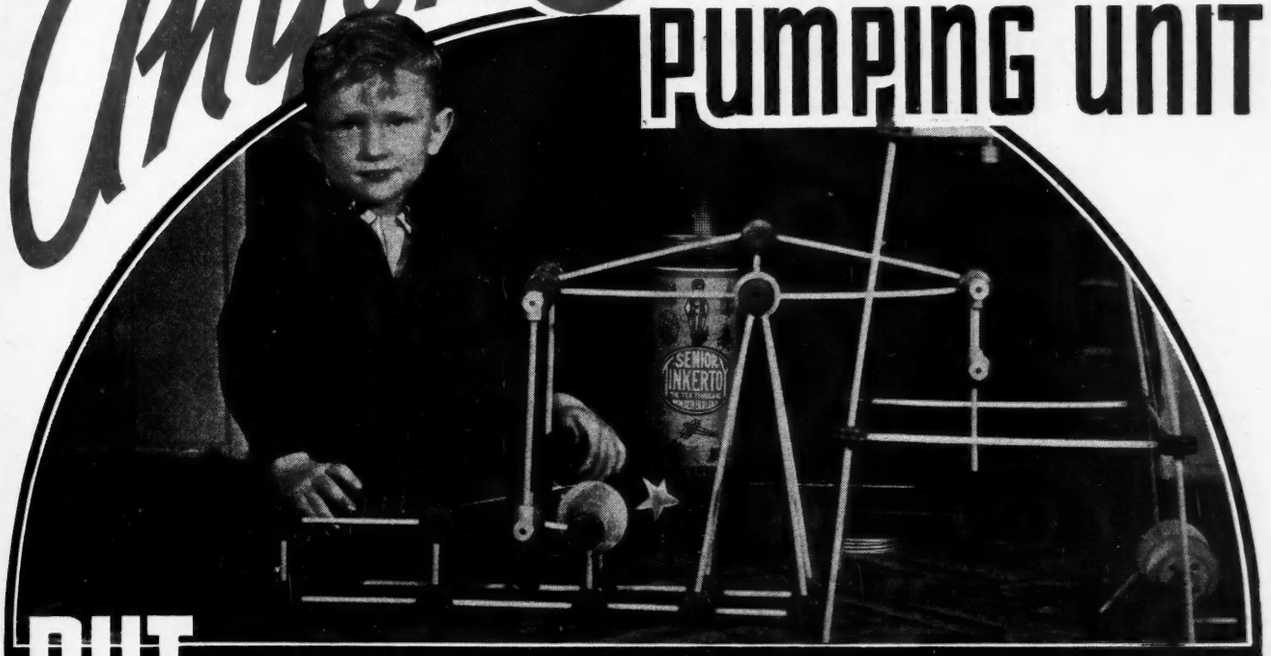

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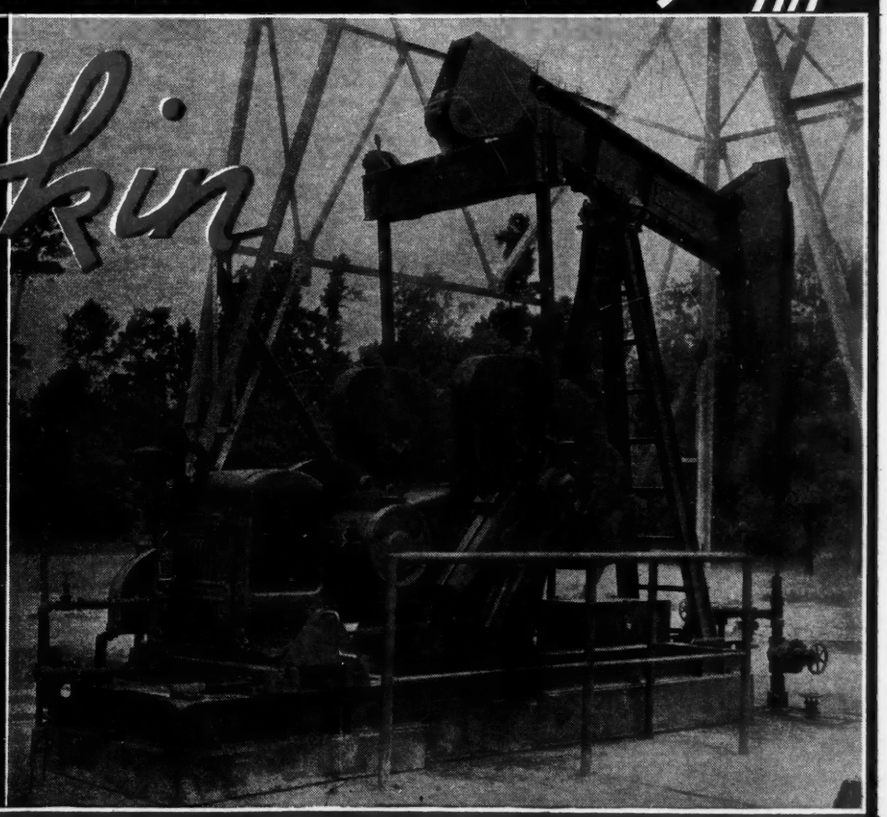

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Oklahoma Is Busy

HEAVY DRILLING FORECAST FOR NEW AIRPORT FIELD

WEEKLY STAFF REPORT

Tulsa.—Although the advent of fine weather meant spring fever to many in this sector of Oklahoma last week, to drillers it meant the beginning of a busy operating season. Increased activity was reflected in opening another shallow pool in Rogers County; the flurry of drilling in the newly opened Airport pool near Tulsa, and the completion of numerous good wells in Fitts.

The pool opener in Rogers County was Arthur Geneva et al's Nichols Brothers Ranch 1, SEc NE SW NE 2-20n-14e, east of Owasso and north of Catoosa, just inside Rogers County. The well found a sand between 650 and 698 feet, bailed considerable free oil and heavy gas. It is located between Young pool and Edgar pools. The sand is said to compare with the Red Fork sand found in the Tulsa Airport pool, 15 miles southwest.

Heavy Drilling Forecast for Airport

That the area surrounding the newly opened Airport pool, eight miles northeast of Tulsa, is due for an extensive drilling play, became evident last week as more wells were planned. Extension tends toward the south, with Viking Oil Company of Tulsa leading the parade. Its new test is Hargrove Hudson 1, CS½ SE SW 24-19n-13e. The hole was spudded about 10 days ago, and drilling was being carried ahead below 190 feet in black shale. The well had a good puff of gas between 165 and 175 feet in the big lime. Another break is expected soon.

Meanwhile, activity was going ahead at a rapid pace in the Airport pool itself, as the twelfth producer is on its way to completion. The well is Galbraith, Byers et al's Turner 1, NWc 35-20n-13e, about one-quarter mile from the nearest producer. It was given a shot between 1022 and 1037 feet and looks good for from 20 to 30 barrels. Some doubt was expressed concerning the pay sand, it being called both Bartlesville and Red Fork sand. The well is the most northeasterly in the field.

Another Extension Looms

What looked to be the thirteenth producer for the pool was Haddock & Dorner's Zerner 1, in Starr Acres subdivision, the most westerly drilling test in the proven area. The well had sand from 1079 to 1096 feet and bailed some free oil. It was given a shot and started cleaning out. If successfully completed, it will be an extension well, the second within the week.

Gubser & Marshall's Gubser-Fee 2, SW SE NW 35-20n-13e, came in early last week to flow for 20 minutes, the oil spraying high above the 75-foot mast of the drilling machine. Production came from between 1069 and 1091 feet. Indications are the well is good for from 125 to 150 barrels of oil a day. Gubser and Marshall have announced location for Gubser-Fee 4, which will be a south offset to Turner 1.

G. C. Coulter's O. A. Daugherty 3, NEc NW SW 35-20n-13e, was showing for a possible 25 to 40 barrels of oil daily from sand had between 1065 and 1080 feet, thought to be the Red Fork. Shot with 70 quarts, the well made same small flows before being shut in preparatory to cleaning out. Some gas was found around 600 feet.

Defined on Northwest

The second dry hole has been reported from the area, defining the northwest limit of the field. It is Peason and Aitcheson's Paschal 1, in Exchange Acres, near NEc 34-20n-13e. It had some gas and a small show of oil in broken sand from 1065 to 1070 feet, drilled ahead and stopped at 1096 in broken sand. Only a little gas was showing, and the well was ordered plugged and abandoned. It is about one-quarter mile northwest of the proven portion of the field. The first dry hole, reported some ten days ago, was Alva J. Niles' Fee 1, SE NE SW NW 35-20n-13e, abandoned at 1380 feet in the Mississippi lime.

Next well due for completion in the area is Haas and Marrs' Ricker 1, NW SW SW SE 35-20n-13e, most southeasterly test in the area. The well had Oswego lime from 440 to 477 feet. A small flow of oil was found in the Prue sand between 547 and 558 feet. Drilling is being carried ahead below 800 feet.

Fitts Potentials Still High

Several good potential tests were reported from Fitts. Potential on Fleetborn Oil Company's Morin 6-A, NW SE SE 20-2n-7e, which was completed last week, was set at 4211 barrels of oil and 4,080,000 cubic feet of gas. Production was from the Sylvan shale after drilling to 3922 feet and being acidized with 10,000 gallons. Bottom hole pressure was 1465 pounds.

Skelly Oil Company's Metropolitan Life Insurance Company 8, NW SE SW 23-2n-7e, drilled to 3932 feet and plugged back to 3660 feet. Acidized with 10,000 gallons it flowed 100 barrels of oil the first hour through tubing. It was re-acidized with 10,000 gallons and flowed 162 barrels of oil the first hour and 143 barrels the second hour, through tubing. It established a potential of 3870 barrels of oil and 4,386,000 cubic feet of gas.

Skelly's Metropolitan Life Insurance Company 9, NE SE SW 23-2n-7e, topped Hunton lime at 3549 feet, drilled

Tests Disappointing

BOTH LUCIEN PPOJECTS FAIL TO FLOW COMMERCIAL OIL

Oklahoma City.—Two tests in North Lucien pool of Noble and Garfield counties looked disappointing last week: Shell Petroleum Corporation et al's Guthrie 1, CNW SW 31-21n-2w, had the second Wilcox sand at 5400 feet. A core recovery yielded only a salty taste. After recovering junk at 5443 feet, the well was drilled ahead to 5453 feet in the Wilcox, where it had a slight show of oil and gas. It was last reported drilling below 5478 feet in hard white sand with no show of oil. In the Garfield County portion of the pool, Shell et al's Tate 1, SEc NE 36-21n-3w, second test for that portion of the pool, made a test at 5358 feet. It then drilled ahead to 5390 feet and swabbed through tubing for 10 hours with no show of oil.

Langston Outpost Flows

Eason Oil Company's Smith 1, SW NW NW 13-17n-1w, one-half mile south of Langston pool in Logan County, cut Wilcox sand from 5112 to 5128 feet and ran seven-inch casing to 5068. Later, while the crew was attempting to pull drill pipe in order to complete the well, it started flowing. The well was shut in, then water was run in to hold the oil back. When it was opened once more, the oil again started flowing. It was shut in.

Champlin Refining Company's Pfeiffer 2, CN½ N½ NW 4-19n-2w, Logan County portion of Lucien, topped the second Wilcox sand at 4920 feet and found some gas. The test made two small flows amounting to about 25 barrels of oil. When last reported the hole had bridged about 50 feet off bottom.

Ritz Oil Company's State 1, NW NE SW 16-29n-2w, northwest of Braman pool of Kay County, was dry and abandoned at 4949 feet in the Wilcox sand.

to 3945 feet, and was acidized with 10,000 gallons. It had made some previous flow and following acid treatment, flowed 168 barrels of oil the first hour and 149 barrels the second hour through tubing. On a 24-hour potential test it made 4510 barrels of oil and had 3,162,000 cubic feet of gas with a bottom hole pressure of 600 pounds.

Outpost Flows 385 barrels Hour

E. H. Moore's McCarty 2, NE SE NE 22-2n-7e, farthest north producer in the field, flowed 385 barrels of oil an hour through pressure equipment, oil coming from Hunton lime at 3830 feet. The well later flowed 131 barrels of oil in 15 minutes and then made 383 barrels through casing the following hour to establish a potential of 4737 barrels of oil with 4,860,000 cubic feet of gas. Bottom hole pressure was 1665 pounds.

Moore's Patrick 3-A, SW NW NE 31-2n-7e, topped the Wilcox sand at 4440 feet, from which depth it made a 24-hour potential of 2530 barrels of oil and 993,000 cubic feet of gas.

Moore's Harper 6-A, SE NW NE 29-2n-7e, topped Sylvan shale at 3750 feet and drilled to 3765 feet, where it was acidized with 10,000 gallons. The well then flowed 187 barrels of oil the first hour, 32 barrels the second hour and 17 barrels the third hour through tubing on gas lift. On a 24-hour potential, the well made 256 barrels of oil and an estimated 1,225,000 cubic feet of gas. Bottom hole pressure was 600 pounds.

Carter Oil Company's Smith 12, SW NW SW 28-2n-7e, drilled to 3420 feet in Hunton lime and flowed 177 barrels of oil the first hour, 52 barrels the second hour and 43 barrels the third hour. The well rated a potential of 347 barrels of oil in 24 hours and made 1,443,000 cubic feet of gas with a bottom hole pressure of 1113 pounds.

Magnolia Petroleum Company's Simpson 17, SW SE NE 29-2n-7e, topped Hunton lime at 3303 feet and drilled to 3586 feet where it flowed 403 barrels of oil in one hour through casing. Production followed acidization with 10,000 gallons. Magnolia's Hardin 11, NE NW NE 30-2n-7e, topped Hunton lime at 3585 feet, drilled to 3885 feet and was acidized with 10,000 gallons. It then flowed 199 barrels of oil the first hour through casing and was shut in to take potential.

Moore's Well Shows Nothing

Interest was beginnning to fade in E. H. Moore's Muse 1, SW NE SE 33-2n-7e, just across the fault and south of production in the field. Muse 1 drilled from 4995 to 5005 feet in a sandy zone, and drilled from 5015 to 5025 feet in dry sand. The well topped the dense lime at 5060 feet and was drilling ahead below 5160 feet with nothing showing.

In another part of Pontotoc County, W. A. Delaney's Starrett 1, SW SE NE 21-5n-5e, north of Bebee, topped Viola lime at 2533 feet and cemented seven-inch casing at 2545 feet. The well drilled to 2597 feet and swabbed 16 barrels of oil in four hours and was to be shot.

Oil Standing in Jesse Test

In Jesse pool, Continental Oil Company's Helms 1-A, NW SW SE 2-1n-7e, topped the Bromide sand at 4438 feet and drilled to 4500 feet. There were 3000 feet of oil standing in the hole. Later in the week it was reported drilling below 4545 feet with 3100 feet of oil standing in the hole. After drilling to 4564 feet in the same formation, it made two flows totaling 54 barrels of oil while drilling.

Stanolind Oil & Gas Company and Amerada Petroleum Corporation's Rushing 2, SE SW SE 32-11n-4e, Shawnee pool, Pottawatomie County, was brought in last week flowing 365 barrels of oil in 19 hours with heavy gas pressure. Production was coming from 4417 feet in Earlsboro sand. It was later deepened to 4431 feet and flowed 531 barrels of oil in 24 hours.

Mid-Continent Petroleum Corporation's Logan 1-A, NEc SE 31-11n-5e, west of North Earlsboro, was drilling below 1350 feet. Rig was skidded when the crew was unable to drill around tools and pipe lost at 3324 feet in the original hole.

Olson Drilling Company's Gilles 1, NW NE NW 5-10n-4e, Shawnee pool, Pottawatomie County, had a hole full of oil when the plug was drilled to 4440 feet, and operators were swabbing. The hole was bottomed at 4458 feet in the Earlsboro sand.

Lynch et al's Hyde 1, NE SW NE 24-5n-5e, Wetley pool, Seminole County, topped Hunton lime at 2376 feet and had a show of oil from 2551 to 2559 feet. Top of the Sylvan shale was found at 2559 feet, and the well was drilled to 2695 feet where seven-inch casing was being run.

Recovers Saturated Core

Sinclair Prairie Oil Company's Rossanna 1, NWc SW 28-10n-8e, south of Cromwell, topped Cromwell sand at 3397 feet and cored to 3405 feet, recovering a saturated core. At 3421 feet, supposedly the base of the sand, another show of oil was found in a core, but when it was bailed down, salt water was found. Reports state the well is to be plugged back.

Lynch et al's Doner 1, SWc NE 24-5n-5e, topped Viola lime at 2685 feet and drilled to 2695 feet. Hunton lime was perforated with 50 shots between 2550 and 2567 feet, following which the hole filled 1600 feet with oil.

J. E. Crosbie, Incorporated's McGirt 1, SW SE SW 25-10n-7e, had Cromwell sand from 3647 to 3667 feet, and after shutting out water, found the oil pay and flowed 40 barrels of oil an hour for a short time. On an eight-hour test, the well averaged 32 barrels of oil an hour and was holding steady at 25 barrels per hour when last reported.

Ross Oil Company's B. F. Davis 2, SE NW SW 16-9n-7e, east of East Seminole pool, flowed 10 barrels of oil an hour with 100 pounds pressure. The well was bottomed at 3485 feet in Cromwell sand topped at 3446 feet.

Lincoln County Gas Well

Anderson-Prichard Oil Company's Colon 1, NW SE SW 28-17n-4e, south of Agra in northern Lincoln County, was rated good for 6,800,000 cubic feet of gas in dolomite. After rigging up standard tools, the well topped first Wilcox at 4345 feet; topped the second at 4387 and drilled to 4392 feet, where it found salt water. It was to be plugged back to the first Wilcox and tested.

Winona Oil Company et al's Harjo 1, SW SE NW 20-7n-8e, west Holdenville area of Hughes County, topped the Booch sand at 2885 feet and cemented five-inch casing at 1885 feet. The well was then drilled ahead to 2931 feet and filled 2100 feet with oil. It was shut in to erect tankage.

Ray Branstetter et al's test in SE SW SE SW 28-22n-11e, Branstetter pool, Osage County, had Siliceous lime from 2042 to 2056 feet and flowed four barrels of oil an hour natural.

Tulsa.—Of the 59 wells completed in Oklahoma during the past week, 39 were oil producers with initial production of 65,712 barrels, and 4 made a total of 87,100,000 cubic feet of gas. Thirteen were failures and 3 locations were abandoned.

Scouts reported 39 locations announced during the week, Pontotoc County leading with 11 first reports. Six locations were filed by Okmulgee County, 4 each in Okfuskee and Pottawatomie, 3 in Stephens and 2 each in Carter, Noble and Seminole. A single report was received from Garfield, Jackson, Logan, Marshall and Tulsa.

LINE WORK STARTS

Oklahoma City.—Oklahoma Pipe Line Company has started work on an extension of its line from the Oklahoma City station to Moore pool of Cleveland County, due to the recent increase of Carter Oil Company's production in the area. The line is to be 12 miles long, and will consist of 9 miles of 6-inch and 3 miles of 8-inch line.

STATE TAKING BIDS

Oklahoma City.—Sealed bids on two tracts in Rogers County, northeastern Oklahoma, will be received by the state land office here until 1:30 p.m. March 31. The two tracts, in detail, are as follows: No. 1, comprised of 110 acres, in E½ SW S½ NW SW and NW NW SW 1-22n-16e, near Foyil; No. 2, comprised of 78.01 acres, in Lot 1, E½ Lot 2, N½ SE NE 5-21n-17e, in the East Claremore area.

OKLAHOMA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ATOKA COUNTY—		
Hickey & Eldridge, Fidelity Life 1, se sw nw 23-1s-12e	*	735
CADDO COUNTY—		
English Drlg., Gaffney 3, cel nw se 31-6n-9w	40	3300
Wastika Drlg., Melton 2, ne sw se 26-6n-10w	¶83	5364
CARTER COUNTY—		
Sinclair Prairie, J. D. Daugherty 6, sw ne ne 29-2s-3w	lcn.	abd.
CLEVELAND COUNTY—		
Gulf Oil, James 2, se nw sw 27-10n-2w	¶41 & 19,819	7281
COMANCHE COUNTY—		
Edwards & Cadgene, Culberson 2, nw ne ne 32-2n-10w	¶1½	470
CREEK COUNTY—		
Sinclair Prairie, Dacon 32, sw ne se 16-17n-7e	¶2½	2405
Jackson Oil, Marz 1, se se ne 25-18n-10e	15	1805
Doak & Hughes, Hodem 1, sw se nw 11-19n-9e	10	2394

[*Continued on page 66*]

[*Continued from page 65*]

Company, Well and Location	Init. Prod. Bbls.	Depth
GARVIN COUNTY—		
Cox & Hammon, Perry 4, ne se sw 32-1n-3w	181	2770
HARMON COUNTY—		
Lioalko Trust, Crosnoe 1, se se sw 14-3n-25w (otd 2870)	*	3340
JACKSON COUNTY—		
Gulf Oil, Ely 2, se se se 10-1n-20w (otd 1758) (pb 1321)	¶1/10	2321
LOGAN COUNTY—		
Champlin Ref., Pfeiffer 1, cn½ ne nw 4-19n-3w	¶3¾ & 4796	5042
MARSHALL COUNTY—		
Leavell Coal, Cox 3-B, sw se ne 26-7s-5e	*	444
MUSKOGEE COUNTY—		
Butram, Huckleberry 1, se se nw 20-15n-20e	*	706
OKFUSKEE COUNTY—		
Manahan, Bunner 2, ne se se 24-10n-8e	140	1847
Stanolind, Bunner 5, ne ne ne 25-10n-8e	482	1848
Sherman et al, Bridges 1, nw sw sw 8-10n-9e	40	1882
Blackwell et al, Lehmer 2, sw nw nw 17-10n-9e	100	1920
Sinclair Prairie, Fisher 4, nw sw sw 19-10n-9e	227	1837
Fisher 5, se sw sw 19-10n-9e	175	1832
Harvey Oil, Steward 1, ne ne ne 28-10n-9e	lcn.	abd.
Chapman et al, F. Williams 5, ne nw nw 30-10n-9e	114	1800
Berry et al, Sands 1, ne ne nw 28-10n-11e	120	2647
Prince & Anderson, Likowski 3, cnl nw sw 23-11n-11e	*	2053
Commercial Drlg., Comey 2, nw ne ne 26-12n-11e	40	2651
Glass, Rentie 1, ne nw nw 17-14n-15e	*	1653
OKMULGEE COUNTY—		
Pine, Beams 1-A, sw se se 4-15n-14e	150	1610
Thompson, Burgess 1-A, csl ne 26-12n-12e	5	2393
Selby, Domhigh 1-A, cel nw ne 3-14n-14e	75	1683
OSAGE COUNTY—		
Bay Oil et al, 1, sw ne sw 9-22n-11e	*	2131
Pure Oil, 148, cwl e½ sw ne 5-23n-8e (otd 1214)	200	2061
Lewis Prod. 5, sw nw se 28-24n-7e	55	2634
PONTOTOC COUNTY—		
Blackstock, Lewis 3, sw se se 19-2n 7e	1065	4420
Stahl Pet., Dennis 9, sw nw sw 21-2n-7e (pb 4192)	3954	4335
Moore, M. Burris 1, cs½ n½ s½ 22-2n-7e	¶2¾ & 4132	3720
Sinclair Prairie, Wooley 15, sw ne sw 22-2n-7e	¶1¼ & 982	4375
Wooley 17, ne se sw 22-2n-7e	3707	3635
Blackstock, Moody 4-A, se sw sw 23-2n-7e	3753	3841
Moody 5-A, ne sw sw 23-2n-7e	402	3895
Grity, Masters 2, ne ne sw 23-2n-7e (pb 3789)	2131	3855
Skelly, Metroplitan Life 10, se nw sw 23-2n-7e	¶3¼ & 4384	4015
Bishop Oil, Simpson 5-A, nw nw nw 28-2n-7e	2553	3757
Skelly, Park College 18, sw sw ne 28-2n-7e	¶3 & 3527	3490
E. H. Moore, Inc., McKoy 1, ne se se 29-2n-7e (pb 4086)	2291	4375
Magnolia, D. Hardin 10, nw nw ne 30-2n-7e	¶2¼ & 2225	4345
Stanolind, Hardin 10, ne nw sw 30-2n-7e	¶5¾ & 2233	3565
Boetcher, Haney 2, nw nw sw 24-4n-7e	15	1743
Bowles, Fee 1, se se nw 22-5n-8e (otd 480)	*	904
POTTAWATOMIE COUNTY—		
Commercial Drlg., Fowler 1, ne sw ne 3-7n-4e (otd 4060)	15	4145
SEMINOLE COUNTY—		
Deep Rock et al, Lozier 3, ne sw nw 20-9n-7e	*	3516
Wrightsman Oil, May 4, nw sw sw 25-10n-7e	lcn.	abd.
Amerada et al, Yahola 3, se nw nw 36-10n-7e	¶1 & 834	3659
Parks 2, se ne sw 35-11n-5e	720	4634
Papoose Oil, Yarber 1, sw sw nw 15-11n-8e	*	3615
STEPHENS COUNTY—		
Mudge Oil, Robertson 10, ne sw sw 10-3s-5w	¶1 & 5	1464
Raizen Bros., Prince 2, se nw sw 10-3s-5w	*	1470
TULSA COUNTY—		
Sinclair Prairie, Jenks Tank Farm 42, nw nw ne 13-8n-12e	*	2065
Swift Bros., McKee 1, cne sw 13-19n-10e	*	1895

*Failures; †Junked; ¶Million cu. ft. gas.

Much Drilling

ONE POOL OPENED AND FOUR ARE EXTENDED IN KANSAS

WEEKLY STAFF REPORT

Wichita.—Drilling operations in Kansas continued on a high scale last week as one new pool was opened and four others were extended. The southwest limit of production in the Lorraine pool of Ellsworth County was apparently defined, and what appears to be an extension well was being carefully watched in McPherson County.

The new field was opened by Ohio Oil Company's Schwab 1, SE SW SE 9-24s-10w, in the Eureka area of Greenwood County, which found production around 2700 feet in the Siliceous lime. It is 10 miles north of Eureka, and midway between the Thrall-Agard pool and a well drilled some years ago by John A. Edwards on the Parks farm, which found production in the Siliceous lime.

Extension of the Walters pool of Ellis County, three locations south, seems assured as Carter Oil Company's Staab 1, NWc 11-12s-18w, had a showing of oil. Top of the Kansas City lime was found at 3355 feet, and the first oil from 3398 to 3401 feet. A core fom 3401 to 3412 feet recovered 8 feet, 5 feet of which was saturated with oil. The Walters pool produces from both the Topeka and Siliceous limes. Staab 1 will be carried to the lower formations before being completed. Last minute reports state it was preparing to core again, after getting a show between 3544 and 3547 feet, which was believed to be in the top of the Siliceous lime. Showings were had in both the Topeka and Kansas City limes.

In the north-central portion of Ellis County, Tom Deal and Wolf Creek Oil Company's Dreiling 1, NWc SW 4-12s-17w, extended lime production in the Shutts pool, and looks to be good for about 1000 barrels of oil daily from Siliceous lime at 3502 feet. The well swabbed 50 barrels of oil an hour without lowering the fluid level below 1200 feet. Equipment failed, however, and prevented a thorough test. On a later test, the well swabbed 135 barrels of oil in 3 hours from 3527 feet in the Siliceous lime. It was cleaning out preparatory to drilling a few feet deeper.

Gueda Springs Extension

Sinclair Prairie Oil Company's Collinson 1, SE NW SE 5-34s-3e, apparently extended production in the Gueda Springs pool of Cowley County last week, showing for a producer from the Bartlesville sand at 3316 feet. Production was estimated at 250 barrels of oil, while the gas flow was estimated at from 2,000,000 to 4,000,000 cubic feet. The extension was about ¼-mile north. The well was shut in while cleaning out following drilling of the cement plug, and after a shot, flowed 132½ barrels of oil in 14 hours and was shut in for tankage. On a later flow, the well made 167 barrels of oil in 24 hours, and after the hole is cleaned out, it will be given another shot and a regular production test made.

The company also brought in another producer at Matlock 6, NW SW SE 3-24s-4w, which originally was completed as a dry hole in the Siliceous lime. Plugged back to 3380 feet in chat, and after being acidized with 3000 gallons, it flowed 1550 barrels of oil in 24 hours. It is in the center of the south portion of the Burrton pool.

Possible extension of the Graber pool of McPherson County is being watched for at Derby Oil Company's Elizabeth Arnold 1, SWc NW 16-21s-1w, two locations north of production. The well swabbed 10 barrels of oil and 10 barrels of water an hour for two hours from the Hunton lime at 3529 feet after being acidized. Testing was being continued.

Carter Oil Company's Elizabeth 3, CN½ NE 34-17s-9w, defined the southwest limit of production in the Lorraine pool of Ellsworth County, when it filled 2200 feet with water from Siliceous lime at 3200 feet. Top of the formation was found at 3178 feet, and a small show of oil was had from 3188 to 3189 feet.

Stafford County, in the west-central part of the state, was probably the most active area during the week. Stanolind Oil & Gas Company's Garvin 1, SWc NE 23-24s-13w, an offset to the discovery producer in the St. John pool, was pumping 110 barrels of oil an hour from Siliceous lime at 4102 feet after being acidized. The well was later completed for 2252 barrels of oil.

Lario Oil & Gas Company's Morgan 2, NE NW SE 23-24s-13w, was pumping 65 barrels of oil an hour from Siliceous lime at 4081 feet. On a later test, it pumped 1444 barrels of oil natural. A new production test is planned with production estimates running as high as 2400 barrels.

Empire Oil & Refining Company's O'Conner 1, NEc 17-24s-15w, northwest of Macksville in Stafford County, had an estimated 1,500,000 cubic feet of gas showing from the Siliceous lime at 4129 feet, after drilling the plug. When the gas was encountered, tools were blown up the hole and lodged, but were later fished out. Water broke in from behind the casing, making another cementing job necessary.

Atlantic Oil Producing Company was to make location for McNahgten 1, NW NE NE 27-24s-13w, 1¾ miles southwest of production in the St. John Pool, and W. P. Faulkner made location for Herman Schulz 1, SE NE NE 6-22s-13w, near

Seward and 3 miles from the Gates pool. It is also 8 miles southeast of the Hiss pool of Barton County.

Gulf Oil Corporation's Gossman 1, SW NW SE 8-21s-7w, southeast of Lyons in Rice County, began filling with oil from 3255 feet in the conglomerate after the plug had been drilled. Gossman 1 is midway between the discovery wells in the Theede and Alberta Johnson sectors. It was coring when last reported.

Continental Oil Company's Michels 1, NEc SW 12-18s-8w, south of Geneseo, filled 2900 feet with oil in 3 hours from Siliceous lime at 3210 feet.

Hinkle, Swain & Jones' Schoenig 1, SWc SE SE 21-18s-10w, was a location, 3 miles northwest of production in the Orth pool of Rice County. The new test is also ½-mile southwest of a dry hole drilled by Swain about one year ago.

Viola Lime at Medicine Lodge

The discovery well of the Viola lime in the Medicine Lodge area of Barber County was brought in last week when Barbara Oil Company et al's Holmes 1, SEc NE 15-33s-13w. In two feet of lime from 4845 to 4847 feet and opened for 25 minutes, the well flowed 45 barrels of oil and 2,000,000 cubic feet of gas. The gas increased to nearly 8,000,000 cubic feet in less than an hour, forcing oil out of the tank. No gauge could be made, but field reports state both oil and gas were increasing. Location has been staked and rig was being built for Holmes 2, SEc NW 14-33s-13w, a direct east offset to the new producers.

In New Territory

A test in untried territory is being started by C. R. Craft at NEc SW 8-10s-16w, 2 miles east of the town of Codel and northeast of production in the Bemis pool of Ellis County. The test, in Rooks County, is on an 80-acre tract owned by Craft, and will be supported by Phillips Petroleum Company, Shell Petroleum Corporation and Carter Oil Company. It is on a core-drilled structure.

Earl Wakefield et al's Yoder 1, SWc 34-24s-5w, a mile south of production in the Yoder pool, topped chat at 3423 feet and encountered a small show of gas. Five-inch casing was being run preparatory to drilling in.

Indian Territory Illuminating Oil Company's Peter 2, in Section 24-20s-11w, in the Peter pool of Barton County, was completed for 1449 barrels of oil natural from Siliceous lime at 3253 feet.

A disappointment in the same county was Hutchinson Oil & Gas Company's Wendell 1, NEc 13-19s-11w, northeast of production in the Eberhart pool, which was abandoned at 3378 feet. It had a hole full of water.

Clyde Pulse et al's Payne 1, SWc NW NE 4-22s-7w, northwest of Hutchinson in Reno County, which got a hole full of water in conglomerate at 3440 feet, was to plug back to test a show of oil at 3278 feet in the Kansas City lime. The hole filled 300 feet with oil when the tools first went through the lime.

A. M. Landon et al's Eureka Bank 1, SWc NW 15-24s-12e, southeast of Hamilton in Greenwood County, was completed and rated good for 5 barrels of oil daily from the Mississippi lime at 1746 feet.

Lario Oil & Gas Company's Cress 1, NEc 13-11s-17w, northeast of the Bemis pool of Ellis County, drilled to 3302 feet in Siliceous lime and filled 3200 feet with oil in 3½ hours. It was cleaning out and running tubing to test.

Indian Territory Illuminating Oil Company's Mueller 1, NWc NE 30-24s-4w, in the Haven pool of Reno County, was completed for 805 barrels of oil natural from the chat at 3280 feet.

KANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BARTON COUNTY—		
Texas Co., S. McLean 1, sw sw ne 25-17s-11w	641	3322
Continental, Ainsworth "A" 1, se se ne 33-16s-13w	1440	3395
Duee & Brouk, Baker 1, ne se sw 16-17s-13w	*	3500
Morgan & Flynn, Brack 1, ne ne ne 21-18s-15w	¶47	3555
Derby Oil, Benjamin 1, ne ne sw 31-20s-13w	*	3360
CHAUTAUQUA COUNTY—		
Griffin & Bell, Oliver 15, ce½ w½ nw 1-32s-10e	37	1668
COFFEY COUNTY—		
Saco Oil, Scott 2, nw sw nw 13-23s-14e	48	1625
Scott 3, ne sw nw 13-23s-14e	20	1625
COWLEY COUNTY—		
Trees Oil, Littrell 4, ne nw ne 19-30s-4e	*	3006
Lewis Prod., Sitton "C" 1, ne sw ne 30-31s-6e	*	3018
GREENWOOD COUNTY—		
Schaffer & Howell, Schneider 13, se nw nw 15-23s-13e (otd 1637)	30	1777
Hollis et al, Boone 1, ne ne nw 21-26s-12e	*	1130
Landon & Parrish, Eureka Bank 1, sw sw nw 15-24s-12e	5	1743
HARVEY COUNTY—		
Schafer et al, Haury 1, cne se 11-23s-2w	1183	2970
Bradley Oil, Haury 1, nw nw sw 13-23s-2w	*	2996
KINGMAN COUNTY—		
Shell, McMichael 1, cw½ w½ sw 12-27s-10w	*	4535
McPHERSON COUNTY—		
Hutchinson O&G, Lewis 1, ne se sw 26-19s-2w	80	2970
Dickey & Gulf, Goering 7, sw ne se 17-21s-1w	1360	3334
Continental, Kindblade 1, ne se sw 20-21s-1w	720	3334
Blair 3, sw nw sw 21-21s-1w	1666	3332
Wenger 2, sw nw nw 21-21s-1w	1031	3324
RENO COUNTY—		
Sinclair Prairie, Matlock 6, nw se sw 3-24s-4w	667	3390
Seedle 6, cs½ s½ ne 17-24s-4w	15	3382
Kaufman 1, sw sw se 18-24s-4w	1439	3390
Carter Oil, Ventram 1, se se sw 19-24s-4w	788	3378
Shell, Lee 2, se se se 10-26s-9w	4078	4141
RICE COUNTY—		
Empire, Banterton 1, se sw se 11-18s-8w	268	3270
Shell, Haferman 4, nw nw se 6-19s-9w	1412	3243
Gulf Oil, Steckel 4, ne se ne 31-19s-10w	1299	3296
Stolz 10, cs½ n½ nw 32-19s-10w	773	3303
Knop 4, se nw nw 33-19s-10w	1499	3291
Stolz Jr. 10, nw ne nw 5-20s-10w	1469	3313
Stolz Jr, 11, nw se nw 5-20s-10w	1358	3304
Atlantic, Patton "B" 2, nw ne ne 7-21s-7w	2576	3332
Texas Co., Schartz 4, se sw se 33-19s-10w	1155	3337
RUSSELL COUNTY—		
Texas Co., C. Anschutz 6, ne ne sw 1-14s-15w	843	3124
Phillips, Jellison 2, nw ne nw 30-13s-14w	860	3232
Bridgeport, Mills "B" 4, nw sw se 33-13s-15w	lcn.	abd.
Stanolind, Benso 6, nw nw sw 4-14s-15w	97	3175
Transwestern Oil, Polcyn "B" 4, sw ne se 10-14s-15w	668	3267
W. I. Southern, Inc., Michaelis 4, nw ne nw 31-15s-13w	2580	3264
Schafer 9, sw nw ne 31-15s-13w	45	3035
Coralena Oil, Boomhower 6, se nw nw 32-15s-13w	2546	3278
Gulf Oil, Michaelis 1, nw nw sw 32-15s-13w	1478	3328
Skelly, Neidens 2, sw sw ne 32-15s-13w	2547	3336
Dickey et al, Krug 1, sw se ne 34-15s-13w	864	3313

MONUMENT FLANK

Development of sandy lime looks encouraging

NEW MEXICO

WEEKLY STAFF REPORT

Hobbs, N. M.—Development of oil production from the sandy-lime horizon paralleling the east flank of Monument took a promising aspect the past week when Continental Oil Company et al's J. M. Skaggs 1, C NE SE 24-20s-37e, showed free oil with 150 feet of drilling fluid in 10 minutes when a formation tester was used at 3798-3851 feet. Five-inch pipe has been cemented at 3796 feet.

This semi-wildcat is 3½ miles east of nearest oil production in the Monument lime area, and 1⅞ miles northeast of a shut-in gasser. It is also 1¾ miles southeast of The Texas Company and C. & G. Oil Company's Ellen Weir 1, which showed for a small oil producer from the equivalent of the Hobbs lime at 4074 feet, or 510 feet sub-sea, but failed to shut off water. Skaggs 1 is bottomed at a sub-sea depth of 510 feet.

The Texas Company and Ajax Drilling Company's J. P. Alexander 1, C Lot 14, 5-21s-37e, located 1¾ miles northeast of the nearest oil production in the sandy-lime belt flanking the Eunice lime area, has cemented seven-inch pipe at 3535 feet, with the hole bottomed at 3540 feet, after encountering showings that give promise of making a well. It has an elevation of 3490 feet.

Lea County Comes Back

Drilling operations in Lea County scored a comeback the past week with 17 new locations and 13 completions, as compared to 10 producers and eight locations the previous week. Monument area continues to set the pace, having accounted for four of the locations and seven of the new oil wells.

Prorated areas in Lea County were assigned a slight reduction in allowables for the March 16-31 period in

Company, Well and Location	Init. Prod. Bbls.	Depth
SEWARD COUNTY—		
Helmerich & Payne, Hyde 1, csw 14-31s-34w (pb 2745)	40	2850
STEVENS COUNTY—		
Missouri Valley Gas, Phillips 1, cs½ 10-35s-39w	¶8	2752
SUMNER COUNTY—		
Wakefield & Meah Oil, Napp 1, sw sw nw 2-34s-5e	*	3217
Vickers Pet., Markley "B" 1, se se sw 32-31s-1w	169	3701
Stelbar, Barlow "B" 4, ce½ w½ se 33-31s-1w	1068	3699
Continental, Rothrock 3, ce½ w½ nw 4-32s-1w	1204	3691
TREGO COUNTY—		
Watchorn O&G, Galloway 1, cse ne 16-11s-23w	*	4125
WOODSON COUNTY—		
Ward McGinnis, Weide 2, se ne se 31-23s-15e	*	1586
Oko Oil, Weide 2, nw nw sw 32-23s-15e	30	1592
Houghland 1, cn½ nw ne 2-24s-14e	20	1632

*Failures; †Junked; ¶Million cu. ft. gas.

order to provide a 250-barrel increase for Artesia field and to absorb new wells completed the previous period. The cut was ordered by the Oil Conservation Commission to hold the state's total output to its March quota of 103,200 barrels daily.

Lea County areas prorated on a flat well basis were cut from 93 to 91 barrels daily. Hobbs field was reduced 763 barrels to 21,621 barrels daily, although it added its first completion since last June when Stanolind Oil & Gas Company's W. S. Capps 30, SW SE 3-19s-38e, responded to treatment with 12,000 gallons of acid in lime at 4205 feet with a potential rating of 5476 barrels, and an allowable of 76 barrels.

Hobbs Rating Cut

Potential of Hobbs field was cut 16,871 barrels to 2,112,655 barrels for 256 wells effective March 16, according to the revised proration schedule prepared by C. G. Staley, umpire. The reduction was due to lower bottom hole pressure readings.

Shell Petroleum Corporation's State 1-D, SE NW 24-18s-37e, completed in October, 1934, showed 1286 pounds pressure at 400 feet sub-sea, and was credited with the highest pressure reading. It made water when given its first production gauge.

Prolific natural producers for inside locations in Monument put in their appearance the past week. Anderson-Prichard Oil Corporation et al's H. M. Britt-Conoco 7-A-7, SE NW SE 7-20s-37e, gauged 120 barrels of oil per hour through an inch choke on casing with drill pipe in the hole at 3856 feet, and increased to 180 barrels per hour on a ¾-inch choke when deepened to 3865 feet, or 309 feet sub-sea.

Barnsdall Oil Company's A. Cooper 7, C NW SW 7-20s-37e, drilled to 3885 feet, or 326 feet below sea level, and flowed 1076 barrels of oil in one hour through a four-inch line on casing after kicking off with gas. It later gauged 210 barrels per hour through an inch tubing choke, with gas rated at 2,000,000 feet daily. The company has only one remaining location on its most productive lease in the field.

General Crude Oil Company and Magnolia Petroleum Company's State 1-G, C NW NW 16-20s-37e, shared in the big flow by averaging 120 barrels per hour through open tubing from lime at 3850 feet. Amerada Petroleum Corporation has started operations on W. P. Byrd 2-A, C SE SW 12-20s-36e, and Laughlin 2, C NE NW 9-20s-37e. Repollo Oil Company has awarded contract for W. P. Byrd 4, NE SW NW 11-20s-36e, and has authorized the immediate drilling of Frances Stuart 2-B and J. T. Lanehart 1-A, both offsetting production in the sandy-lime belt to the east of Jal. Skelly Oil Company is rigging up to drill Van Etten 4, C NE SW 9-20s-37e.

To Acidize at Vacuum

Magnolia Petroleum Company's State 1-G, second test for the Vacuum wildcat area, will be acidized after plugging back from water at 4905 feet to 4794 feet, where it was shot with 580 quarts of nitro. The well swabs 45 barrels on short tests, and the oil column rises 2200 feet in five hours. This concern's Will Cary 2, offsetting production in the South Eunice, or Penrose sandy-lime area, flowed by heads while drilling at 3620 feet. Stanolind Oil & Gas Company's Eva Owens 1, C SW NW 3-22s-37e, a short distance southeast of Eunice, is an outpost location.

In the Skelly, or lower part of the South Eunice field, Skelly Oil Company has made the following locations:

NEW MEXICO

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
LEA COUNTY (Eunice Field)—		
Continental Oil Co., State 7-D-15, c nw se 15-21s-36e	3000	3878
Continental et al, A. E. Meyer 18-B-4, lot 2, 4-21s-36e	150	3840
Gulf Oil Corp., A. F. Houston 4, c nw se 7-21s-36e	858	3900
LEA COUNTY (East Jal Field)—		
El Paso Nat'l Gas Co., W. H. Harrison 1, c nw nw 7-25s-37e	¶3½	3558
LEA COUNTY (South Eunice-Skelly Area)—		
Skelly Oil Co., R. R. Sims 2, c ne sw 3-23s-37e	780	3600
LEA COUNTY (Hobbs Field)—		
Stanolind, W. S. Capps 30-X, c w½ sw se 3-19s-38e	5476	4205
LEA COUNTY (Monument Field)—		
Amerada Pet. Corp., W. P. Byrd 4, c ne nw 12-20s-36e	4500	3885
Sarah Phillips 2, c ne sw 33-19s-37e	50	3910
Anderson-Prichard Oil Corp., Britt-Conoco 7-A, se nw se 7-20s-37e	9600	3865
Barnsdall Oil Co., A. Cooper 7, c nw sw 7-20s-37e	25,000	3885
Gen'l Crude Oil Co.-Magnolia, State 1-G, c nw nw 16-20s-37e	3000	3850
Gulf Oil Corp., T. Anderson 3, c se se 8-20s-37e	2500	3870
T. Anderson 4, c nw ne 17-20s-37e	2000	3870

*Failures; †Junked; ¶Million cu. ft. gas.

In the Skelly, or lower part of the South Eunice field, Skelly Oil Company has made the following locations: G. W. Sims 2, C NE NE 9-23s-37e; R. R. Sims 3, C SW SE 4-23s-37e, and R. R. Sims 4, C SE SW 4-23s-37e. Gulf Oil Corporation's J. M. Carson 1, C NW SW 28-21s-37e, offsets production on the north of Eunice.

Ohio Oil Company's State McDonald 5, C SE NW 16-22s-36e, offsetting production in the south portion of Eunice lime area, is exploring the lower section of the lime at 4500 feet after failing to make a commercial oil well in the regular 3900-foot zone. Linking Eunice and Monument fields with a solid string of wells advanced one location nearer through the starting of operations by Phillips Petroleum Company's State-Quapaw Trading Company 1, C SE SE 19-20s-37e. Location also was made by the company for State-Hudson 1, C NW NE 30-20s-37e, giving it four operations on adjoining sites.

East edge locations involved Stanolind Oil & Gas Company's Gilluly 3, C SE SW 33-20s-37e, and Devonian Oil Company's Evans-State 2, C Lot 16, 3-21s-36e.

Shell Petroleum Corporation has started work on State 2-M and 3-M, located on Lots 9 and 1, respectively.

Continental Oil Company's State 7-D15, C NW SE 15-21s-36e, gauged 102 barrels of oil per hour on a ¾-inch tubing choke from lime at 3878 feet. Gas volume was rated at 1,420,000 feet daily.

The Texas Company et al's C. W. Shepherd 3-B, SW NE NE 5-26s-37e, east outpost for South Jal, tested 48 barrels fluid, including 45 percent b.s. and three percent water, in 11 hours at 3290 feet, and has plugged back to 3265 feet to acidize.

Excess Production

[*Continued from page 15*]

barrels, or 4 percent, in January. February consequently brought a greater increase in storage than did January. Furthermore, the allowables became still more liberal March 1, when the six leading states prescribed schedules that exceeded the federal allocations 171,742 barrels daily, or 5.8 percent. These allowables are responsible for the all-time record levels of crude production in recent weeks and the continued additions to above ground storage.

Texas Allowables Liberal

Texas, particularly, has been wandering farther away from the Bureau of Mines allocations in the past several months, and in March is accounting for a large percentage of the total national excess. Oklahoma is exceeding the federal quota in March, whereas the state adhered to the federal allocation in the two preceding months. Kansas allowables for March are above the federal recommendation, but the excess is lower than in the two preceding months. New Mexico, as in earlier months, continues about 15,000 barrels above its federal allocation. California's goal for March is under the Bureau of Mines allocation, as in January and February, in compensation for excesses in some earlier months; although actual production continues to run higher than the federal recommendation. Louisiana earned special mention by fixing a state allowable as of March 1 below the Bureau of Mines suggestion, after having progressively tightened up on allowables in earlier months.

Texas thus stands as the state most seriously exceeding the Bureau of Mines estimates of demand.

Storage Gains in Texas Conspicuous

The excesses in Texas are reflected, moreover, in the rising trends of crude oil stocks during the past six weeks, as shown in an accompanying table. In the six weeks ended March 6 the nation's crude stocks increased 4,400,000 barrels. That increase occurred in the face of substantial withdrawals from storage in California, the Rocky Mountain States, North Louisiana and Arkansas, and Pennsylvania. The increase was caused by small gains in stocks in the Middle West and substantial additions to storage in West Texas and New Mexico, East Texas, other Mid-Continent districts in the aggregate, and on the Gulf Coast. The high Texas alowables clearly are reflected in these additions to crude storage.

Assuming that other states will adhere as closely to the Bureau of Mines allocations in coming months as in the past, the future of the storage situation will depend largely on allowables prescribed by the Railroad Commission of Texas. High Texas allowables would promote further additions to storage and perhaps market difficulties; just as strict Texas allowables would tend to balance supply with demand and thus stabilize the markets.

60 Barrels an Hour

BENNETT AREA WELL CAUSES DRILLING ON NEARBY TRACTS

WEEKLY STAFF REPORT

Midland.—Responding to acid treatment with a minimum flow of 60 barrels of 34 gravity oil per hour, Texas Pacific Coal & Oil Company's Ruth Bennett 1, second producer for the Bennett area, Yoakum County, will result in the starting of additional tests on nearby acreage.

Bennett, proved for production early last year, is one of four widely scattered strikes that have pushed the north end of the Permian Basin into the foreground with extensive lease and royalty play and additional prospecting.

The above well originally was completed in January flowing 572 barrels natural from lime at 5183-5236 feet, and when deepened to 5305 feet encountered bottom hole water. It was plugged back to 5280 feet, and flowed 440 barrels oil in 12 hours after a 380-quart nitro shot at 5090-5275 feet. After using 5000 gallons of acid the well flowed an average of 28 barrels per hour for 13 hours on a 5/8-inch choke, then gauged 48 barrels and 60 barrels through open tubing the following two hours. It was put back on the choke and made 30 barrels per hour prior to being shut in for storage.

Arrangements have been made to truck the oil to Means field, where deliveries will be made to Humble Pipe Line Company.

The Texas Company's Bob Slaughter 1, southwestern Hockley County wildcat and next completion due for one north basin area, was drilling in extremely hard lime at 470 feet. No showings have been recorded since topping first lime at 4205 feet, with an elevation of 3560 feet.

Amon Carter to Drill

Drilling operations were scheduled to get underway late last week on Amon G. Carter et al's A. L. Wasson-Conoco 1, NW NW SW Section 48, Block A-X, PSL Survey, Gaines County, near the north line of the county and 14 miles west of Seagraves. T. J. Drilling Company has moved in a Diesel rotary to fulfill a 5200-foot contract. Carter was assigned 50 percent interest in six adjoining sections by Continental Oil Company in return for drilling a test. He also optioned six sections that adjoin on the east at similar terms. Continental Oil Company recently checked the two blocks with geophysical instruments.

Humble Test Low

Low structural position is credited to Humble Oil & Refining Company's J. S. Means 1-B, C NW NW Section 1, Block A-45, PSL Survey, situated about three miles southeast of production in Means field, Andrews County, and slightly greater distance east of a small wildcat pumper. Means 1-B was drilling anhydrite at 4520 feet, with an elevation of 3158 feet.

C. L. Peters and Allen Hargrave have made location for J. Riordan 1, C SW NW Section 10, Block A-44, PSL Survey, about two miles southeast of Andrews, the county seat. It is 2¾ miles northeast of a two-well pool on the Parker land.

In southern Gaines County, Landreth Production Corporation's C. Cobb 1 was drilling in anhydrite at 440 feet, with an elevation of 3252 feet.

Drilling was in progress the past week on a number of scattered Ordovician lime tests. In Crane County, John 1, Moore et al's Barnsley 1 was logging sand at 6582 feet after being idle for some weeks at 6509 feet. Floyd C. Dodson et al's Texas American Syndicate 1-A, northern Brewster County, was drilling at 3930 feet, with additional water sand at 3805-20 feet. Gulf Oil Corporation's W. N. Waddel et al 4, third deep test by the company in the Sandhills field, Crane County, was drilling at 5053 feet.

In Pecos County, Stanley A. Thompson et al's Elsinore Cattle Company 1, centering upon a 38,000-acre block, was drilling at 4780 feet. Humble Oil & Refining Company's Mrs. M. E. Gray 1, western Pecos County, Delaware sand prospect, was drilling at 1740 feet, with an elevation of 3592 feet.

In Reeves County, Grisham-Hunter Corporation's Montgomery 1-A, also a Delaware test, was logging anhydrite and shale at 2955.

Shell Petroleum Corporation has strengthened its position in the Goldsmith field, Ector County, through purchase of a lease from Texas Pacific Land Trust on the south 200-acres of the north 400 acres of Section 25, Block 45, T. & P. Ry. Survey, T-1-N, for $20,000 cash, and $50,000 payable from 1/6 of 5/6 of the gross production. The comparatively small cash consideration was due to the lease carrying 1/6 royalty.

Landreth Production Corporation et al's Clarence Scharbauer A-1 was completed with an initial of 1552 barrels after using 6000 gallons of acid in lime at 4166-4224 feet, and the first wells were in the process of completion on two 160-acre leases. Scharbauer 1-E flowed 12½ barrels oil hourly after using acid at 4210 feet, and was deepening at 4220 feet to take in more saturation before using acid again. Scharbauer 1-G was awaiting results of 6000 gallons of acid in lime at 4171-4235 feet.

Gulf Oil Corporation's Goldsmith 12 earned a potential rating of 2380 barrels of 37.3 gravity oil after using 7000 gallons of acid at 4125-4204 feet.

STIMULATE OLD AREAS

Young and Stephens strikes in deep lime

Wichita Falls, Texas.—Oil and gas strikes from deep lime horizons in Young County and to the south in Stephens County recorded within the past week promise to give further stimulation to the development of these old areas. Comparatively low crude prices in recent months forced a shutdown of operations in the deep oil and gas zones in Stephens County, and checked normal drilling in the established fields in central and south Young County.

In eastern Young County, The Texas Company's Stephens 2, third flowing producer for the company's 2355-acre block proved for production in 1932, gauged 631 barrels initial after using 4000 gallons of acid in lime at 4054-4083 feet. In the north central portion of Young County, Pitzer & West and Lion Oil Refining Company's Norton 2 gauged 1200 barrels initial after using 8000 gallons of acid in lime at 3850-3910 feet. R. H. Vise et al's G. W. Norton 1 produced 250 barrels of oil the first hour after 4000 gallons of acid at 3779-3856 feet.

Production test for Rathke Drilling Company et al's C. W. Johnson 1-A, 1 mile southwest of gas and distillate strike made last January by A. R. Eppenauer et al's Eddleman 1, situated 2½ miles southeast of Graham, has been delayed by the landing of 5-inch pipe on top of Marble Falls sand. Gas sand was logged at 4226-29 feet, and oil sand at 4229-38 feet, with shale continuing to 4244 feet. It was rated at 100 barrels daily before running pipe, and will be shot.

Renew Stephens Interest

Renewed interest in deep production possibilities of Stephens County followed in the wake of a 22,000,000-foot gas flow from Talbott et al's Kennedy 2 from lime at 3892-3900 feet. W. T. Garrett et al's Echol's 1, encountered 5,000,000 feet of gas in lime at 3856-3860 feet.

TESTS DELAYED

Hutchinson well sold; deep hole is caving

Borger, Texas.—Completion of Stansylvania Oil & Gas Company's C. B. Lasater 1, semi-wildcat oil producer for the Stinnett area, Hutchinson County, has been delayed through the sale of the well and lease, embracing the north 320 acres of Section 27, Block M-23, T. C. Ry. Survey, to Phillips Petroleum Company. The deal is reported to involve $160,000 cash, and the purchaser assumes an oil pay-

ment of $125 per acre due from ⅛ of the production, and also to drill two more tests. The well developed 2000 feet oil in hole from broken lime section at 3175-3265 feet, with an elevation of 3305 feet, and will be given a nitro shot by the new owner. It is about 1¼ miles northwest of nearest production.

Magnolia Petroleum Company's E. C. Britain 4, C E½ T. & N. O. Section 175, Block 3-T, Moore County, has been completed as a gasser, rated at 79,976,000 feet potential, with 398 pounds rock pressure from lime at 2940 feet. Top of lime was logged at 2270 feet, with an elevation of 3417 feet. The company elected to defer search for oil on its Britain 5440-acre lease in order to build up gas supply for its natural gasoline plant now underway in the area, although Britain 3 recently opened a new oil area with an initial yield of 35 barrels at 3415 feet.

Progress on Phillips Petroleum Company's G. W. Porter 1, projected Ordovician lime test on a Wheeler County wildcat block, has been delayed by cavings at 7140 feet. Salt water from granite wash zone above this level has aggravated the situation. An effort will be made to check the cavings by cementing the hole. Humble Oil & Refining Company is assembling a drilling block for a deep test in Wheeler County.

WHEELER HEARING

Austin.—Texas Railroad Commission has scheduled a hearing for April 3 at Austin to consider evidence upon which to base a new order for prorating gas produced in Wheeler County.

If an order is issued, it will be the first promulgated since the supreme court entered its decision striking down the order which was in effect last year.

The hearing was called at the request of Senator Clint Small, author of the Panhandle Gas Waste Control Law and representative of operators in the area.

486 TEXAS STARTS

Austin.—The Texas Railroad Commission approved last week permits for drilling 486 new wells in Texas, 82 more than were allowed the week before.

North Texas reported 109 permits, which included 24 in Cooke County, 30 in Wichita County, 13 in Archer County, 10 in Montague County, 10 in Wilbarger County, and 10 in Young County. West Central Texas reported 21 locations.

There were 78 locations from the East Texas field, with 30 in Gregg County, 27 in Rusk County, 18 in Upshur County, and 3 in Smith County. East Central Texas listed 72 permits, with 29 in Titus County and 16 in Hopkins County.

There were 69 locations from Southwest Texas, with 36 in Duval County. Gulf Coast operators reported 54 locations, with 14 in Nueces County.

There were 68 permits from West Texas, including 27 in Winkler County, 12 in Ward County, and 11 in Ector County. Panhandle operators reported 15 new locations.

TEXAS PANHANDLE
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CARSON COUNTY—		
Magnolia, Fee 21 (No. 244)	743	3020
J. R. McGill & Haze, E. Cooper 6-A	682	3028
Sinclair Prairie, E. Cooper 5	635	3100
Skelly Oil Co., H. Schafer 83	908	3085
GRAY COUNTY—		
Alma Oil Co., O. R. Kritzmair 3	252	3286
The Texas Co., M. B. Davis 11	574	2800
HUTCHINSON COUNTY—		
Harvester Oil Corp., W. B. Haile 5	369	3080
Owl Oil Corp., J. W. Moore 5	676	3108
Phillips Pet. Co., J. W. Moore-Timms 4-A	436	3109
MOORE COUNTY—		
Magnolia, E. C. Britian 4	¶79.9	2940

*Failures; †Junked; ¶Million cu. ft. gas.

NORTH TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
Brown & Kriss, G. R. Campbell 5, blk 11	10	1236
L. T. Burns et al, J. D. Carpenter 5-A, sec 89	*	1817
S. L. Clum et al, J. D. Lasater 1-C	*	1275
Daniels Prod. Co.-King Oil Co., J. H. Turbeville-Conoco 1, blk 124	*	1550
Golding & Cochran, G. B. Hamilton 2-A, sec 6	45	1160
B. R. Jeske 7, sec 6	150	1187
L. F. Wilson 1, sec 89	*	1500
Hammond Oil Co. et al, J. D. Powell 1	*	2703
J. T. Miller et al, S. B. Herron 1, sec 6	*	1179
Peery-Woody & Young, W. Duckworth 3, blk 7	5	1404
Seaboard O&G Co., H. Wilmut 6-A	2	900
J. L. Sorey et al, W. J. McMurtry 1, blk 11	20	757
CLAY COUNTY—		
Bridwell Oil Co., Saner-Lomax 4	14	217
COOKE COUNTY—		
F. W. Merrick, Inc., A. Knabe 34, blk 12	11	842
Mudge Oil Co., Johnson 17	25	1195
United Producers Co., J. H. Jones 1	*	1809
FOARD COUNTY—		
The Texas Co., L. K. Johnson 11	2000	3662
JACK COUNTY—		
Edwards, Knowles & Crespi, Simpson Bros. 1	255	2985
Hamilton Pet. Co., J. S. Rhodes 1	352	2367
Luther Hedrick et al, G. F. Brown 1	*	3035
Peery & Woody, J. A. Raley 1-B	800	2962
WICHITA COUNTY—		
H. W. Barton Jr. et al, W. B. Honaker 1	*	1120
L. T. Burns et al, Waggoner Bros. 16, blk 15	*	1317
Waggoner Bros. 18, blk 15	*	613
Deep Oil Dev. Co., Munger 8-A	795	3863
Dinsmore & Stipe, C. Guyer 1	*	159
Douglas Prod. Co., L. P. Douglas 28-A, sec 14	3	305
L. P. Douglas 29-A, sec 14	*	396
King Oil Co., Waggoner Est. 4-I	8	1042
Perkins & Cullum, S. B. Burnett 23, sec 5	20	1360
I. B. Persky et al, Foster-Allen 3, sec 1	*	1830
Rubsam & Hunter, W. D. McClure 19-B, sec 5	15	1316
The Texas Co., Waggoner Est. 432, sec 13	101	1978
WILBARGER COUNTY—		
Bason Drlg. Co. et al, Waggoner Est. 1, sec 2	*	2443
Lido Oil Co., Waggoner 17-C, sec 50	30	2103
Waggoner Ref. Co., Waggoner Est. 7-CC	10	1104
YOUNG COUNTY—		
Bohner & Gilmore, Prideaux 7-A, blk 15	10	585
W. F. Collins et al, Birdie Ward 1, sec 260	*	633
Helmerich & Payne, J. H. Rubenkoenig 1	*	4228
Hinson & Tidwell, S. D. Thompson 2, sec 427	980	3903
B. B. Mercer, Tr., N. L. Hardy 3, sec 260	*	670
Nash & Windfohr, B. F. Manley 3, sec 2727	¶5 & 200	3318
R. J. Watson et al, J. F. Larrimore 1-B, sec 252	*	660

*Failures; †Junked; ¶Million cu. ft. gas.

WEST TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANDREWS COUNTY (Means Field)—		
Humble, J. S. Means 16	1249	4530
ANDREWS COUNTY (Fuhrman Field)—		
Shell, E. F. King 1	300	4486
CRANE COUNTY (McCamey Field)—		
E. P. Cravens et al, Gibbs-Hughes-Conoco 3	644	2263
John Hertz et al, E. S. Hughes 1-B	*	2129
Texas Consolidated Oil Co., Hughes-Texas Co. 5	798	2093
CRANE COUNTY (Sand Hills Field)—		
Humble, J. B. Tubb 7	4703	4420
ECTOR COUNTY (Foster Field)—		
Broderick & Calvert, H. C. Foster 2	523	4202
ECTOR COUNTY (North Cowden Field)—		
Alma Oil Co., L. E. Wight-Conoco 1-C	189	4216
Empire O&R Co., B. H. Blakeney 1	326	4240
ECTOR COUNTY (Goldsmith Field)—		
Atlantic Ref. Co., W. F. Cowden 4	†	2246
Empire O&R Co., H. E. Cummins 2-B	298	4300
Gulf, C. A. Goldsmith 12	2380	4204
Humble, W. F. Cowden 2	1680	4290
Landreth Prod. Corp., C. Scharbauer 1-F	1552	4224
GLASSCOCK COUNTY—		
Conoco & Group 1 Oil Corp., Settles 25-S	363	1272
HOWARD COUNTY—		
Ambassador Oil Corp. et al, C. D. Read 8	230	2768
JONES COUNTY—		
R. B. Farris, L. Fikes-Ungren & Frazier, Guitar 4	318	2193
Ungren & Frazier, H. Dorsey 12-C	507	2153
NOLAN COUNTY—		
Robinson Drlg. Co., Ed. Gabler 1	*	3669
PECOS COUNTY (Wildcat)—		
Humble, J. H. Tippett 1	*	1220
TERRY COUNTY—		
W. L. Pickens et al, J. B. Lewright 1	*	4971
UPTON COUNTY (McCamey Field)—		
L. H. Choate-Fred T. Hogan, Baker-Conoco 1-A	800	2272
Continental Oil Co., A. A. Reese 4	652	2634
Cordova Union Oil Corp., Fee 2, sec 2	152	2198
J. W. Ellis et al, J. W. Robbins 8-B	974	2208
A. R. Eppenauer et al, J. F. Lane-Pure 1-B	315	2117
Gulf Oil Corp., J. H. Shirk 8	201	2320
Humble, R. P. Ricker 19	284	2115
D. L. Hunter et al, J. W. Robbins 4	1054	2194
T. B. Knox-Fensland Oil Co., A. S. Burleson 1	220	2352
West Texas Pet. Corp., (A. R. Eppenauer), W. A. Chaney 4	*	2416
Williams & Williams Drlg. Co., J. W. Robbins 3	432	2208
WARD COUNTY—		
Gulf Oil Corp., E. W. Estes 13	1192	2620
G. W. O'Brien 79	712	2773
Humble, L. Richter 12	1060	2600
Pat Moran et al, F. T. Robison 2	*	2863
R. Olsen & Anderson (M. K. Drlg. Co.), P. M. Yell 1	*	2600
Provine & O'Quinn, Inc., H. Hadwin 1	*	2202
Richardson Oils, Inc., Hathaway 22	4213	2650
Rio Bravo Oil Co., D. Olcott 16	1341	2486
Standard Oil Co. (Texas), I. B. McFarland 3-37	3339	2650
Tide Water Associated, W. D. Johnson 9	4320	2676
WINKLER COUNTY (Emperor Field)—		
Algord Oil Co., E. W. Cowden 1	¶3½	3148
WINKLER COUNTY (Henderson Field)—		
Atlantic Ref. Co., Fred Leck 3-D	8000	3070
WINKLER COUNTY (Kermit Field)—		
Harry Adams Corp. et al, Walton 7-A	1273	3100
Illinois Oil Co., Central State Bank (Abilene)-Conoco 11-A	1100	3140
Magnolia, J. B. Walton 59	887	3000
Mid-Continent Pet. Corp., Walton 16	1029	2970
Sinclair Prairie, Walton 13-B	1044	3100
WINKLER COUNTY (Wildcat)—		
Read & Duffy, John Sealy 1	*	4520

*Failures; †Junked; ¶Million cu. ft. gas.

Grapeland Gas

SHOWING IN WOODBINE GIVES AREA HIGHER RESERVE RATING

WEEKLY STAFF REPORT

Tyler.—Value of the Grapeland deep Woodbine area in northern Houston County as a major gas reserve has been enhanced since American Liberty Oil Company et al's J. A. Bean 1, Green Evans Survey, logged 71 feet of sand and shale section before reaching first water sand at 6089 feet, or 5600 feet below sea level. This test failed to offer encouragement of oil production in the Woodbine, and was drilling near the 6200-foot level, according to late reports, to comply with contract depth. It will then plug back and case to complete as a gasser in sand topped at 6018 feet, or 5529 feet sub-sea, with streaks of shale to 6046 feet, and clean sand carrying gas at 6046-56 feet. Shale with streaks of hard sand followed to 6064 feet, then dark shale was logged from this level to the water zone.

The discovery gas and distillate producer, located ½-mile northeast, completed after taking in 12 feet of sand topped at 6025 feet, or 5543 feet below sea level. Thickness of the gas zone and possibilities of oil production in the lower strata for this deepest and southern-most Woodbine sand area remained questionable until the second test was drilled.

In northeastern Houston County, 6 miles northeast of Grapeland, Placid Oil Company, Shell Petroleum Corporation et al's J. E. Elliott 1, J. H. Procella Survey, was drilling near the 3900-foot level. It is testing a geophysical prospect for Woodbine production.

Try Trinity at Wortham

Partially depleted Wortham field is slated to receive its first Trinity sand test. C. F. Lytle, Sioux City, Iowa, contractor and part-time oil operator, has moved in heavy rotary to drill Roy Simons 1, R. B. Longbotham Survey, Freestone County, ½-mile south of the town, to the Lower Glen Rose, according to announced plans. Twenty-inch pipe will be landed for a conductor and 400 feet of 16-inch casing will be cemented, and 11¼-inch on top of the Georgetown lime.

Wortham field became a crude market factor within a few months after the discovery of flush production in the Woodbine was made by the late Colonel Alfred E. Humphreys, but it now affords only 84 barrels of net oil daily from the Woodbine, with Pure Oil Company pumping four wells, and C. L. Brown 3.

Tide Water Associated Oil Company and Seaboard Oil Corporation's Monnig 7, first deep test for the Long Lake field, was drilling at 8200 feet.

In northern Anderson County, Tom F. Hunter, Jack Frazier and American Liberty Oil Company's G. E. Gage 1, located on the Blackfoot structure, was logging lime and shale at 6770 feet. It is contracted to 8500 feet, unless productive in the Trinity zones above this level.

In the Opelika area, Henderson County, Tide Water Associated Oil Company et al's McElreath-Sugett 1 was drilling in Washita lime section at 4945 feet, having topped Austin chalk at 3710 feet.

Talco Deep Prospects Dimmed

J. Z. Werby et al's Williams 1, Titus County wildcat, measured up at 6214 feet in lower Glen Rose early last week. After failing to log oil or gas shows with salt water recorded at intervals in expected producing horizons. It is about 2¼ miles east of nearest production in the Talco field, and dimmed the prospects of a deeper pay for the latter field because of its failure to find porous limestone section in the Glen Rose.

Production at Talco reached a new high for the week ending March 15 when 236 pumping and flowing wells averaged 21,361 barrels daily. Shipments of oil from the field continued to lag behind production.

Magnolia Petroleum Company has moved in materials to drill J. R. Chapman 1, NWc of 342-acre lease, Geo. Dyer Survey, situated several locations east of nearest production.

Humble Oil & Refining Company's C. W. Graf 1, SWc of 74-acre lease and on the east end of the Talco field, produced 18 gravity oil when completed recently, pumping 147 barrels initial from Paluxy section at 4253-4365 feet. Pipe was perforated at 4218-4351 feet.

POSTPONE HEARING

Texas production tax to come up on March 30

Austin.—The Senate State Affairs Committee has postponed until March 30, its initial hearing on the Reed Bill increasing to six cents the gross production tax on crude oil.

The delay is the second advantage gained by oil companies last week in their efforts to avoid additional tax. Last Monday when the House of Representatives began consideration of the Jones net income tax bill, which would raise corporate taxes, the measure was so vigorously attacked that its sponsor asked for a delay and stated that he planned to rewrite the bill.

Included in the amendment added on the floor of the House was one which would exempt from taxation all companies paying a severance tax which, of course, would mean oil producing companies and sulphur companies.

Jones hoped to have this clause stricken out and to accept the other exemptions which were added to this bill.

WATER OUTPUT

Kilgore, Texas.—Volume of water produced by wells in the East Texas field amounted to approximately 46,327 barrels daily on January 1, 1937, according to a survey made by H. L. Williford, chief field engineer for the Texas Railroad Commission, and made public the past week. The report lists 2184 wells, as making water, with an average yield of 21.42 barrels of water daily each. Total of 1071 wells are flowing natural, while 1042 wells are pumping and 71 wells are produced by air or gas lift. Survey accounts for a total of 2902 pumping and 314 wells on air or gas lift, including those that yield water. Tabulation prepared by the commission on October 1, 1936, accounted for a daily yield of 42,886 barrels of water from 2081 wells.

EXTEND GASOLINE LINE

Tyler, Texas.—Humble Pipe Line Company is reported planning an extension of its East Texas-Baytown 8-inch natural gasoline carrier from the East Texas field to Rodessa, where a large volume of natural gasoline is being marketed via tank cars. An extension line to Rodessa would involve the construction of about 60 miles of line.

PROPERTY IN DEMAND

Offer $50,000 cash per well on best locations

Tyler, Texas.—Demand for producing properties in the East Texas field is expanding beyond all previous levels. An abundance of cash is available for investment, with prospective buyers agreeable to paying prices that involves six to ten years for properties to earn their cost. Large financial institutions with surplus cash for oil loans are figuring in most of the property trades, and are charging an average of 6 percent interest.

Comparatively few owners of class A properties will sell at the prevailing price of about $50,000 per well for drilled-up leases. Tax levies and absence of more attractive investment opportunities are offered by many independent producers among other reasons for not selling out.

Atlantic Refining Company is the only major that has bought properties at regular intervals within the past two years. Other majors withdrew from the market generally in 1934. The former's most recent purchase involved the payment of $202,000 cash for J. B. Stoddard et al's

McKinley 20-acre lease, D. Sanchez Survey, Gregg County.

American Liberty Oil Company, most active buyer in the field, has contracted for the purchase of Invincible Oil Company (Lockhart Brothers) 7 leases, with 41 wells, in Gregg County, for $50,000 per well. This deal involves the payment of $410,000 cash and $1,640,000 from future production. Harry W. Terte, Kansas City, Mo., et al recently purchased from W. H. Todd, receiver for Harry W. Elliott, 6/8 interest in the Henry McNeely 7.73-acre lease, W. P. Chism Survey, Gregg County, with 3 wells, for $66,585 cash and assumed an oil payment of $15,797. Root Petroleum Company is credited with having loaned the purchasers $45,000 cash at 6 percent interest, payable from oil production within two years, and will run the oil.

NEW KEYSTONE ORDER

Austin.—An order revising the method of allocation in the Keystone field has been issued by the Texas Railroad Commission, and is retroactive to March 1.

On February 20, the commission entered an order fixing the method of allocation on the basis of a marginal well allowance plus a potential allowance. This plan was substituted for a straight per well allowance which had been in effect previously.

The new order reinstated the method of allocations in effect prior to February 20 pending a further hearing on conditions in the field.

ESTES ALLOWABLE

Austin.—An order fixing allowables for the Estes field on the basis of a marginal well allowance plus a potential allowance has been issued by the Texas Railroad Commission. The order is retroactive to March 1.

The commission had entered an order on February 24 fixing allowables on the basis of acreage and potential with 50 percent of the distribution on each factor.

OIL STORAGE TAX

Austin.—A resolution has been introduced in the Texas Legislature by Representative Alf Roark asking Congress to authorize the State of Texas to collect taxes on all oil in storage at ports.

The resolution sets out that there is a large volume of oil so held which the State is now not permitted to tax.

COSDEN REORGANIZED

Fort Worth.—Reorganization of Cosden Oil Corporation and subsidiaries under Section 77-B of the Federal bankruptcy act was given final approval by Federal Judge James Wilson here March 17. Seven committees, representing bondholders and stockholders, informed the court they were in accord on the plan to rehabilitate the company, which has production, refineries, pipe lines and marketing units in Texas. The name of the concern will be changed to Cosden Petroleum Corporation, with headquarters remaining at Fort Worth. Carl M. Loeb & Company, New York banking firm, has contracted to underwrite the reorganized company for $500,000 to be made available immediately. John S. Cosden, head of the Cosden Oil Corporation, was named chairman of the reorganization committee. Others on the committee are: Charles Cornell, vice president; Milton C. Zaidenberg, secretary; Frank J. Price and James Jay Kahn.

GAS-OIL SURVEY

Austin.—The Texas Railroad Commission has issued an order providing for a gas-oil ratio survey to be made of all wells in West Texas and West Central Texas.

Producers have been instructed to file detailed reports on the production from each well during the month of April showing the amount of oil, gas and water produced.

COMPACT BILL

Austin.—The House of Representatives has finally passed the Metcalfe bill extending for two years the right of Texas to join interstate compact oil.

The bill went through the House as an uncontested measure, and on final passage there was not one dissenting vote. No opposition is expected in the Senate.

HEARING IS SET

Austin.—Hearing on South Houston field, which had been postponed to March 26, has been reset for April 2 at Austin. This action was taken by the Texas Railroad Commission upon request of attorneys for independent operators in the field.

BRAYNON LARGER

Takes on proportions of major field after strike

San Antonio.—Branyon Field, Caldwell County, took on proportions of a probable major field for the Balconies fault zone March 19 with Lincoln Petroleum Corporation's F. M. Braynon 5-B, being completed in 8 inches of Edwards limestone topped at 2335 feet. The well had shown oil in the Austin chalk, but drilled ahead to the new formation.

According to late reports from the field, it was showing considerable oil and likely would make a flowing producer.

The strike is looked upon with great importance due to the fact the several Edwards limestone fields along the fault zone have provided large recoveries, ranging up to better than 50,000 barrels per acre on some leases. The extent of the possibilities of this horizon in the Braynon field are doubtful, but there is sufficient room along these faults for a field of considerable extent.

The Braynon field has been unusually active during the past few months as the result of completions in the Austin chalk and Buda limestone.

Completions

EAST TEXAS

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA		
Amerada & Deep Rock Oil Corp, Stovall 29 (194-ac)	1500	3652
Birdwell Oil Co., Rogers-Tipps 2	*	3617
Gulf, L. P. Thrash 12 (78.28-ac)	8000	3712
Humble, C. J. Thompson 24 (116-ac)	6000	3790
Magnolia, T. O. Mason 17 (144.8-ac)	120	3670
F. Markey et al (was Ohio Oil Co.), M. C. DeGuerin 24	2400	3616
Ohio, E. E. Moores 35 (201.4-ac)	750	3720
Sun, G. Patterson 2 (50-ac)	500	3736
KILGORE AREA—		
Fred Birdsong et al, Rufus Jones-Kennedy 1-A	120	3681
Gralenor Oil Co., A. A. King 13 (78.33-ac)	750	3710
Houston Oil Co., S. S. Laird 10 (70.52-ac)	8000	3643
Royal Pet. Corp., R. M. Leath 2 (5-ac)	*	3554
Shell, Rosa Russell 27 (126-ac)	9000	3729
H. R. Smith Inc., D. M. Peterson 4 (6.18-ac)	2500	3552
Sun, C. H. Hilburn-Loyd 29 (133.7-ac)	2000	3646
Termo Oil Co., B. Fox 7 (20.86-ac)	7200	3700
B. Fox 10 (20.86-ac)	7200	3750
Texas Co., J. W. Radford 7 (50-ac)	750	3635
Wheelock & Collins, Dick Wells 19-A (120-ac)	1000	3710
LONGVIEW AREA—		
Arkansas F. O. Co., W. T. Burnside 43 (209-ac)	11,000	3513
Barnett Pet. Corp., G. C. Cannon 3-A (31.67-ac)	480	3649
Barnsdall, M. Adams 18 (102.62-ac)	9600	3584
Day & Co., B. Victory 7 (40.2-ac)	3000	3642
Gulf, J. C. Judge 72 (518.3-ac)	8800	3534
Shasta Oil Co.-Pet. Finance Corp., Campbell 9-A (56¼-ac)	7500	3656
Shell, J. W. Akin 17 (100-ac)	9500	3635
Stanolind, W. M. Harley 6-c (28.44-ac)	5000	3627
J. C. & R. S. McKinley 54-B (84-ac)	7200	3652
Stanolind-Tide Water Associated, P. C. McGeorge 16 (95.8-ac)	8400	3484
ANDERSON COUNTY (Long Lake Field)—		
FHE Oil Co.-Fleming-Kimbell Corp., J. H. Morrow 1 (50-ac)	3500	5355
FRANKLIN COUNTY (Talco Field)—		
Housh & Thompson Inc., Mrs. C. L. Owings 5 (109-ac)	500	4320
McAlester Fuel Co., A. M. Crawford 9 (25.23-ac)	336	4310
HOPKINS COUNTY (Sulphur Bluff Field)—		
D. S. Hager & W. P. Luse, J. G. Reynolds 3 (200-ac)	600	4537
VAN ZANDT COUNTY (Van Field)—		
Humble, J. R. Oliver 6 (59-ac)	10	2932
TITUS COUNTY (Talco Field)—		
Ajo Oil Corp., J. L. Cato 1, lot 3, blk 21	240	4350
W. B. Hinton et al, Pat Davis 1 (12.99-ac)	600	4340
Housh & Thompson Inc., John Hargrove 2 (75-ac)	120	4340
Humble, C. W. Graf 1 (74-ac)	147	4365
E. L. & D. A. Riddle 3 (79.67-ac)	600	4329
Magnolia, K. Mainard 5 (130¾-ac)	328	4307
Alex McCutchin et al, Burke-Talco 27-A, lot 2, blk 31	240	4340
J. S. Rushing et al, C. T. Mitchener 3 (37.2-ac)	102	4300
Tide Water Associated, C. M. Carr 4 (74.37-ac)	500	4315
TITUS COUNTY—		
J. V. McMahon, Geo. McIntyre et al, J. B. Stevens 1 (777½-ac)	†	5074
J. Z. Werby et al, Sam Williams-Stratton 1 (40-ac)	*	6214
SABINE COUNTY—		
McCowan & McCormick, Bell 1, D. McDonald sur	*	2507
CASS COUNTY (Rodessa)—		
Magnolia, Green 8, Robt. Trammell sur	336	6007
Lewis & Wicks 3, Cass Co. Sch. Land sur	504	6150
Lewis & Wick 6, Alex Archer sur	432	6037
Phillips Pet. Co., Farrier 5, W. R. Meyers sur	430	6143
Texas Co., W. M. Hall 7, Alex Archer sur	1608	6065
N. A. Rambo 6, Cass Co. Sch. Land sur	1800	6055

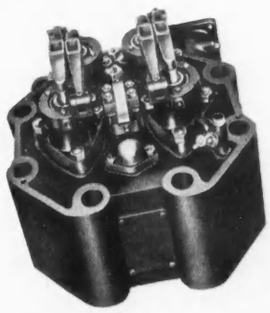
*Failures; †Junked; ¶Million cu. ft. gas.

What's the COUNT ON "SUPERIORS"?

An 8 cylinder 9" x 12" Diesel built for rotary oil drilling service by The National Supply Co. of Delaware, Superior Engine Division, Springfield, Ohio. 1.25% Nickel Cast Iron is used in cylinder heads, blocks and liners.

Up and up! Since 1933 they've used 14,000,000 lbs. of NICKEL CAST IRON

THREE REASONS WHY



The cylinder head is a casting containing 1% Nickel. The liner, of a Nickel-chromium-molybdenum mixture, has a tensile strength of approximately 50,000 p.s.i. The piston contains from 1.50% to 1.75% Nickel.

In many fields, users of "Superior" Diesels have learned that they can be counted on. Counted on for a steady flow of power, able to rise above sudden stress from emergency load. And counted on to deliver that power economically.

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The engine illustrated above works in the oil field . . . where interruptions cost too much to risk them. Superior takes no chances: they use cast irons alloyed with small amounts of Nickel throughout the entire engine. For pistons, cylinder liners, blocks and heads, varying amounts of Nickel, from 1% to 1.75%, give the uniform grain structure, improved strength and toughness and resistance to wear and heat.

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THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL ST., NEW YORK, N. Y.

Uncover New Sands

JIM WELLS AND NUECES HOLD SOUTH COAST INTEREST

WEEKLY STAFF REPORT

Corpus Christi.—Jim Wells and Nueces Counties were to the fore in South Texas Gulf Coast wildcatting, each having several tests logging apparently productive sand sections. The latter county at the same time had its eighth oil field established.

I. J. Allen and Seaboard Petroleum Corporation's J. O. Chapman et al 2, SW Section 38, Laureles Farms, 9,000 feet southwest of the London field, Nueces County, plugged back from 6716 feet and set casing at 6588 feet, perforating at 6460-67 feet with 19 shots. The well flowed 5 barrels of 42 gravity oil per hour through 11/64-inch choke on tubing and developed 725 pounds working pressure and 750 pounds casing pressure. The sand was logged at 6464-84 feet.

This company, which controls approximately 16,000 acres, has staked two more locations to further outline this structure. The company plans a conservative, but continuous development of these properties.

Although this new discovery is in close proximity to the London field, it checks considerably lower structurally and is thought to be separate. It likely will be called Chapman Ranch.

Cosner & Cosner were completing M. L. Stockton 1, NE SE NE Section 25, offset to the discovery well of the London field. It is in broken sand, shale and sandy shale at 4703-19 feet. Edwin M. Jones' Lucy Cooke 1, three miles northeast of the field and in Section 139, is drilling at 4211 feet in sticky shale after having the base of the Oakville at 4011 feet. The elevation is 42 feet, derrick floor, which indicates that the well is checking high at this point.

Two In Jim Wells

Jim Wells County's two prospective wildcat producers are in the northern portion of the county. Baltic Drilling Company's B. W. Owens 1-A, two miles southeast of Alfred and three miles northwest of the Bentonville, cored the 5600-foot sand and on drill-stem test from 5612-16 feet developed 250 pounds dry gas pressure in six minutes. Another core was being cut. The well is in Poitevent Survey, Abstract 585, 75 feet northeast of Gist & Graddy's Owens 1, which logged oil and gas sand at 5296-5308 feet, but was junked with drill-stem stuck. These sands apparently closely log with the Bentonville production.

Also in Jim Wells County, but 1½ miles west of Orange Grove, Arkansas Fuel Oil Company's G. H. Bierstadt 1, Block 32, J. Reynolds Survey, is sidetracking to recore sand at 4798-4728 feet, indicated on electric formation tester. The well cored sand at 4814-17 showing oil and salt water below that level. The test was then drilled to 5017 feet and electric formation tester, indicating the sand top at either 4798 or 4802 feet. It further indicated a good kick to 4817 feet, same as shown on the cores. The plug has been set at 4600 feet, the hole to be redrilled from this point.

The 4,000-foot sand of the Bentonville field, Jim Wells County, was extended one mile west by Stanolind Oil & Gas Company's Bird 1, in the Las Presnos de Abaja Grant, which made a large gasser through ⅛-inch choke after perforating at 4048-74 feet with 30 shots. The well previously had been drilled to 5836 feet.

Saxet Oil Producer

The 3100-foot gas sand at the south end of the Saxet field, Nueces County, and south of Clarkwood, finally has provided a good oil producer. Port Oil & Gas Company's Cox & Cryer 1, on a 72-acre lease, J. M. Gallagher Survey No. 166, flowed 10 barrels per hour through ¼-inch choke with 250 pounds tubing and 500 pounds casing pressure, the sand being logged at 3181-86 feet, casing being set atop the sand. This area generally is referred to as the Buckholt pool, but development has merged it with Saxet. Several 3100-foot wells have produced a small amount of oil, some salt water and considerable gas.

The Texas Company cored sand carrying oil odor at 5431-37½ feet in Sevier 1 and was running drill-stem test. The well is in the William Gamble Survey and is 2250 feet southwest of the discovery well of the Clara Driscoll field. If productive, it opens a new deeper sand Magnolia Petroleum Company and Wellington Oil Company have wells drilling near this level.

Phillips Petroleum Company's Karthering Hutchins 5, located 10,800 feet northeast of present deepest production in the Saxet field, was waiting on cement after setting casing on bottom at 6949 feet. It topped sand at 6879 feet, which continued almost solidly to the total depth. The best kick was at 6925-47 feet when an electric formation tester was run.

Southern Minerals Corporation's Richard King 1, Section 32, 1½ miles northeast of the Bentonville-King production and in Nueces County, cored sand at 4026-33 feet and on a drill-stem test with seat at 4021 feet, 400 feet of oil and mud and some salt water were recovered in 15 minutes, with only six pounds pressure. It was being drilled ahead. This sand is about same level as gas production in the King Ranch area to the southwest.

A well to be watched with considerable interest is Shell Petroleum Corporation's State of Texas 1, which has been located

Sees Exhaustion of Oil

Captain H. A. Stuart (left), director of petroleum reserves of the United States, is telling members of the Senate Naval Affairs Committee that exhaustion of the nation's oil supplies within a generation is conservative. He urged conservation of the naval reserves by acquisition by the government (THE OIL WEEKLY, March 15, page 12). Admiral G. J. Rowcliffe is the gentleman so intently listening to the words of the principal witness.

—International News Photo

in Laguna Madre, southeast of the Flour Bluff field. It is the first marine project and will have a great bearing on other wells to be drilled in the general area.

W. J. Campbell and B. Wilkerson were extending the McCampbell field, Aransas County, several locations to the east with McCampbell 1, Lot 16, Block 10, which is in oil sand at 6546-50 feet. In the same county, but on the Lamar prospect, Barnsdall Oil Company is near 6,000 feet in Edwards 1-A, which will test an 8,000-foot sand discovered in the first test on this prospect.

Eleanor Oil Company's J. F. Green Estate 1, Williamson Survey, on the Gregory prospect, San Patricio County, showed salt water and gas on drill-stem test at 6541-6638 feet. This is the same horizon which showed possibilties of production in several other wildcats in the area, but which finally ended in failures. Phillips Petroleum Corporation's Schmidt 1, northwest of Gregory, is drilling below 5735 feet on a deep test.

NEW YEGUA FIELD

Birks Brothers' wildcat in Bee County produces

Beeville.—A new Yegua sand field, 1½ miles northwest of Normanna in Bee County, was opened by Dirks Brothers' Tom Strauch 1, which is in sand at 4267-75 feet. The discovery well is located 500 feet from the east line and 990 feet from the south line of Section 19, Chittem Ranch subdivision of the J. M. Uranga Grant.

The test flowed 60 barrels on an 8-hour gauge ending 7 o'clock March 19. The flow was through 3/16-inch choke on tubing with working pressure of 225 pounds.

This strike is south and east of the group of Pettus sand fields and is one of the few areas in Bee county to find Yegua production. Pettus horizon failed to develop production in Strauch 1.

J. R. Dougherty et al's L. E. Weiss 1, east of Pettus in Bee County, was abandoned at 4650 feet ater topping Yegua sand at 4526 feet. W. C. McBride, Incorporated's Brown and Hanson, west of Cosden was abandoned after drilling Yegua to 3882 feet.

George B. White et al's Potter 4, 1320 feet west of Slick, DeWitt County, showed gas followed by a thin section of oil sand in Pettus at 4216-27 feet and drilled to 4457 feet. It found salt water in Conroe sand at 4433-51 feet.

R. B. Swiger's Carrie Wood 1, 15 miles south of Goliad, also was a failure, being abandoned at 6004 feet.

Henderson Coquat and Conservative Oil Company's L. A. Reagan 1, S. McGloin Survey, deep test southwest of the Oakville, Live Oak County, was a failure at 3507 feet. In the field, Simmons Oil Company's L. A. Reagan 2-B, made a wet gasser after perforating Pettus sand at 2808-12 feet.

Shreveport.—H. A. Stebbinger and associates were trying to core at 5024 feet last week in hard lime in Pickering Lumber Company 2, A. Hanson Survey, Shelby County, Texas. Gas pressure was reported so strong the operators were reported attempting to prevent a blow-out with drill stem still in the hole.

New Test Theory

OIL MAY BE FOUND BELOW WATER IN EDWARDS LIME

San Antonio.—Oil showings encountered through the section of Edwards lime in Amerada Petroleum Corporation's deep operation at Pearsall, Frio County, places a different light on possibilities of this formation. The previous method of testing Edwards lime was to drill the first few feet. Regardless of structural situation, should the upper portion show water, the well was abandoned.

The above company topped Edwards lime at 6219 feet in Halff and Oppenheimer 8, and at 6230 feet, the well was completed as an oil producer, but developed too much salt water. It was carried ahead, finding a number of hard and comparatively soft streaks in the lime, some of which carried oil shows. While none of these shows were of sufficient consequence to provide commercial production, they do indicate the possibility of finding oil in Edwards lime below water.

Room To Find Out

This well is projected to 10,000 feet, or Trinity sands, should production fail at shallower depths. It is progressing below 7385 feet, having topped Glenrose at 6992 feet. There was a showing of oil in the extreme upper portion of the Glenrose, but it failed to develop production.

Several miles southwest of Halff and Oppenheimer 8, and between Pearsall and an outpost Edwards lime producer, Amerada Petroleum Corporation's Mrs. D. D. Harrigan, Flores Survey, is drilling below 3600 feet on a projected deep test.

93,600-Acre Deal

Wellington Oil Company has completed a deal with D. J. Sullivan for 93,600 acres in Dimmit, Maverick and Zavalla Counties, the largest single lease acquisition in this portion of South Texas in years and is the climax to a heavy leasing campaign along the Chittim anticline trend during the past few months. It is understood that at least one well will be drilled to test to the Trinity sands.

The deal includes the several deep wells on this property in Chittim, opened more than 10 years ago by Rycade Oil Corporation. These wells are large wet gassers producing from Glenrose formation around 5800 feet. One well in the immediate area produced some oil from Edwards lime around 3500 feet, but was drilled ahead due to mechanical difficulties.

Two miles east of this ranch and in Dimmit County, Porter and Connor will drill a well to about 7,000 feet to test the Trinity sands. It will be K. Tideman 1, Section 10, S & GN Railway survey.

Plan Trinity Test Near Carrizo Springs

Near Carrizo Springs, also in Dimmit County, Paul C. Teas and Diamond Halff Oil Company are completing a deal which will result in immediate drilling of a 7,000-foot Trinity sand test.

Diamond Halff Oil Company's E.

Logs, Logs, Logs . . .

well logs on every County in Texas taken from the originals on file with the Railroad Commission.

TEXAS WELL LOG SERVICE

NALLE BUILDING — BOX 247

AUSTIN, TEXAS

Bibbs et al 1, J. Robinson Survey, on the west side of Darst Creek, was drilling at 3310 feet in Edwards lime topped at 2760 feet, elevation 609 feet, derrick floor. The test is still drilling on the downthrow side of the fault. It should top Glenrose around 3450 feet and cut the fault above 4,000 feet. This is one of the most important wells drilled along the Balcones fault in years and is being drilled specifically to test the Trinity on a known Edwards lime producing structure.

Frontier Oil Company's Oppenheimer 1, wildcat six miles south of Lytle in Atascosa County, plugged back from 2770 feet to 2667 feet and is preparing to acidize. It is showing for some sort of producer from 1665-2667 feet.

Oil At 8034 Feet

MESTINAS STRIKE DEEPEST IN SOUTH TEXAS DISTRICT

Mission.—South Texas' first production below 8,000 feet was being proved with Gulf States Oil Company's J. C. Engelman, Jr. 3, being completed after perforating with 44 shots at 8016-34 feet. The well, located in La Mestinas area, eight miles northeast of Edinburg, Hidalgo County, was deepened from 6812 feet, its former producing level.

Northwest of La Blanca

The new discovery is several miles northwest of La Blanca and is believed to be several hundred feet lower structurally than that area. This sand, therefore, would correspond with the distillate sand around 7800 feet in La Blanca.

Engleman 3 was drilled to 8110 feet and an electric formation tester indicated a 70-foot thick sand section topped at 8015 feet. Casing was set on bottom and perforated at 8045-55 feet, where salt water developed. The perforations were cemented and the perforations shot at 8016-34 feet.

Sterling's Wildcat Logs Sands

Sterling Oil & Refining Company's Engelman 1, wildcat in La Blanca area several miles southeast of the above test, is progressing below 7230 feet, having logged several sands above this level.

Over in Willacy County, Shell Petroleum Corporation was coring below 7920 feet in Yturria 1, deep test on La Sal Viejo prospect, which is being deepened from 7669 feet, where it produced for several months. Still farther east and south in Cameron County, Stapper Petroleum Corporation's Port Isabel 1 is progressing near 5,000 feet, headed for 8500 feet.

Another important Rio Grande Valley prospect is Transwestern Oil Corporation's T. B. Slick Estate 2, about 17 miles north of Rio Grande City in Section 527, Starr County. Machinery is being moved in for a deep test. The first well one-half mile to the north, showed for a producer just above 6,000 feet in Jackson formation. It was abandoned due to mechanical difficulties.

Another Samfordyce Sand

In the eastern portion of the same county, two deep wells are being drilled in the Barbacoas area. K. E. Merren et al's Starr County Cattle Company 1 is drilling at 3040 feet on a 6,000-foot contract, while Cook-Maris-Arnold's Starr County Cattle Company 2 is spudding on a test to 5,000 feet or below.

A new producing horizon for Samfordyce was opened by Henshaw Brothers in E. Flores de Flores 1, Tract 250, Porcion 39, at the north end of production. The well drilled to 4140 feet, plugged back to 3110 feet and set casing on bottom. It was gun perforated at 3064-74 feet and made a gasser with 1250 pounds closed in pressure. This sand is 100 feet deeper than the present deepest producing level in the field.

SOUTH TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
SAN ANTONIO DISTRICT		
CALDWELL COUNTY—		
Blundell Oil Co., Luce 1, Neill sur (Branyon)	250	2125
Goode & Mayton, McConnell, W. Spiller sur (Budhanan)	*	1725
Lincoln Pet. Co., Calliham 1, Cooper sur (Branyon)	32	2184
Calliham 2, Cooper sur (Branyon)	30	2170
GUADALUPE COUNTY—		
Louis Crouch, Gatzke 4, Clements sur (Zoboroski)	20	2263
Stoddard et al, Eliza Harris 1, 1650 ft wl, 1125 ft nl Green Dewitt sur No. 11 (perf. 1580-1625)	*	2141
MIRANDO DISTRICT		
DUVAL COUNTY—		
Cox & Hamon, Peters-Coates 5, sur 322 (Lopez)	290	2162
Peters-Coates 6, sur 322 (Lopez)	290	2177
Duval Oil Corp., W. K. Hoffman 10, sur 118 (Hoffman)	360	2876
Bishop Cattle Co., 31, sur 57 (Loma Novia)	280	2573
Humble, E. J. Arnsteine et al, sur 130 (Sarnosa)	*	2456
DCRC 11-C, sur 901 (Lopez)	240	2100
Dowdy-Fee 5, sur 272 (Seven Sisters)	265	2566
Clara D. Sevier 1, 3033 ft most westerly el, 1000 ft sl sur 329	*	4095
T. D. Smith 49, sur 382 (Seven Sisters)	310	2465
Leach & Wilson, L. & P. T. Wright et al 3, sur 72 (Loma Novia)	205	2614
Magnolia, S. Benavides 21, sur 174 (Cole O'Hern)	*	2882
Mrs. Emma Herbst 12, sur 70 (Loma Novia)	40	2743
Reliance Oil & Roy. Co., A. Litchenberger 1, sur 225 (Seven Sisters)	25	2742
Rio Bravo Drlg. Co. & Geo. Coates, Inc., W. R. Peters 2-C, sur 398.	*	2846
Standard of Kansas, O. W. Greene 3, sur 118 (Hoffman)	180	2830
The Texas Co., Bishop Cattle Co. 21, sec 57 (Loma Novia)	435	2582
Wellington Oil Co., DCRC 4, sec 51 (Colmena)	130	1487
JIM HOGG COUNTY—		
French Oil Corp., Paula V. de Garza 2, 660 ft sl, 787 ft el blk 1, sur 269, e of Alworth field	¶10	1025
McMULLEN COUNTY—		
Loma Oil Co., L. Jacob Corp. 2-B, 1300 ft nw No. 1-B, 3960 ft nl 1102-ac tr, GH&HR sur	50	1074
National Pet. Co., H. L. Lark 5-B, Michael O'Boyle sur (Jacob)	15	932
WEBB COUNTY—		
Mills Bennett, A. Lopez 5, sur 111 (Lopez)	345	2256
Cole Pet. Co., Rosa Benavides 98, sur 412 (W. Cole)	¶25	2416
O. W. Killam, A. M. Bruni 49, Mariano Arispe gr (Cole-O'Hern)	40	2961
H. J. Porter, A. M. Bruni 1, sur 585 (Cole-O'Hern)	*	2959
Smith & Hamill, S. Benavides 21, blk 505 (Cole-O'Hern)	160	2937
Sun, S. Benavides 8-A, blk 508, Mariano Arispe gr (Cole-O'Hern)	275	2950
ZAPATA COUNTY—		
The Texas Co., Whitehead 96, Cerrito Blanco gr (Escobas)	*	1507
Valley Osage Oil Co., A. D. Haynes 10, sur 14 (Comitas)	25	1103
A. D. Haynes 14, sur 14 (Comitas)	60	1169
A. D. Haynes 19, sur 14 (Comitas)	30	1125
CORPUS CHRISTI DISTRICT		
ARANSAS COUNTY—		
Atlantic & Eaton, McCampbell Ranch 3-B, blk 40 (McCampbell)	555	6550
BEE COUNTY—		
J. R. Dougherty et al, Laura E. Weiss 1, 1200 ft n Charmo Rd., 900 ft wl 760-ac lse J. M. Uranga gr	*	4650
W. C. McBride, Inc., Brown & Hanson 1, 1850 ft nwl, 308 ft nel of W. H. Harrell sur	*	3882
CALHOUN COUNTY—		
Humble & Plymouth, P. H. Welder 10-B, A. Sisneros sur (Heyser)	650	5491
Portilla Drlg. Co., P. H. Welder 4-C, A. Sisneros sur (Heyser)	250	5483
GOLIAD COUNTY—		
Jane Oil Co., E. Porter Smith 6, B&B sur (N. Pettus)	50	3728
R. B. Swiger, Carrie Wood 1, 460 ft nwl, 890 ft swl, blk 23, Swiger sub, Wood Ranch, Geo Villa sur	*	6004
JIM WELLS COUNTY—		
Tom Graham, L. E. Seeligson 1, S. K. & K. sur 215 (W. Premont)	515	2251
LIVE OAK COUNTY—		
Henderson Coquat & Conservative Oil Co., L. A. Reagan 1, 660 ft w Highway, 150 ft s Sulphur Creek, Santiago McGloin sur	*	3507
NUECES COUNTY—		
Mills Bennett, J. O. Lamb 1, 330 ft wl, 330 ft nl 80-ac lse out of 527.4-ac tr, Vicente Lopez de Herera sur	*	7202
W. C. Brady Tr., Gertrude E. Guy 1, Country Club Place (Saxet Heights)	100	4083
Hiawatha Oil Co., Hutchins-Stillwell 1, Sheppard subd (Saxet), perf 5850-56	480	5871
Howell & Hawkins, W. S. Hutchins 2, sur 416 (Saxet), perf 5258-61	555	6728
The Maryland Corp et al, Stillwell-Sagarin 1, CEIP&M sur (Saxet), perf 6305-07	¶20-100	6355
North Star Oil Co., Rand Morgan 7, sec 405 (Saxet), perf 6754-56	750	6764
Richardson Petr. Co., Perkins-La Gasse 5, Sheppard Farm Lots (Saxet), perf 6737-47	900	6764
J. B. Sedwick 5, sur 312 (Saxet)	1200	4860
Wellington Oil Co. & Pan American, Clara Driscoll Sevier 1-A, Wm. Gamble sur, perf 5348-56	¶10-20	6075
REFUGIO COUNTY—		
Floboots Oil Corp., J. M. Obrien 3-C, Winfield sur (Greta)	80	4394
Hewitt & Dougherty, M. F. Lambert 40, Swisher sur (Tomoconnor)	2510	5918
Illinois Pet. Co., Ira Heard 2, Ximines sur (Greta)	1515	5929
Quintana Pet. Co., Tom O'Connor 45-A, Swisher sur 4 (Tomoconnor)	2240	5903
SAN PATRICIO COUNTY—		
Plymouth Oil Co., E. H. Welder 68-C, sec 71 (Plymouth)	755	5644
E. H. Welder 69-C, sec 71 (Plymouth)	995	5645
VICTORIA COUNTY—		
Barnsdall & American Liberty, Pickering & Buehler 9, J. M. Black sur (Placedo)	865	4770
Pickering & Roos 13, SA&MG sur	960	5911
Shell, Houston National Bank 1, 1072 ft sel, 330 ft nel of 113.37-ac tr SA&MG sur	865	4769
Superior et al, J. Hosek 2, SA&MG sur 7 (Placedo)	960	4767

*Failures; †Junked; ¶Million cu. ft. gas.

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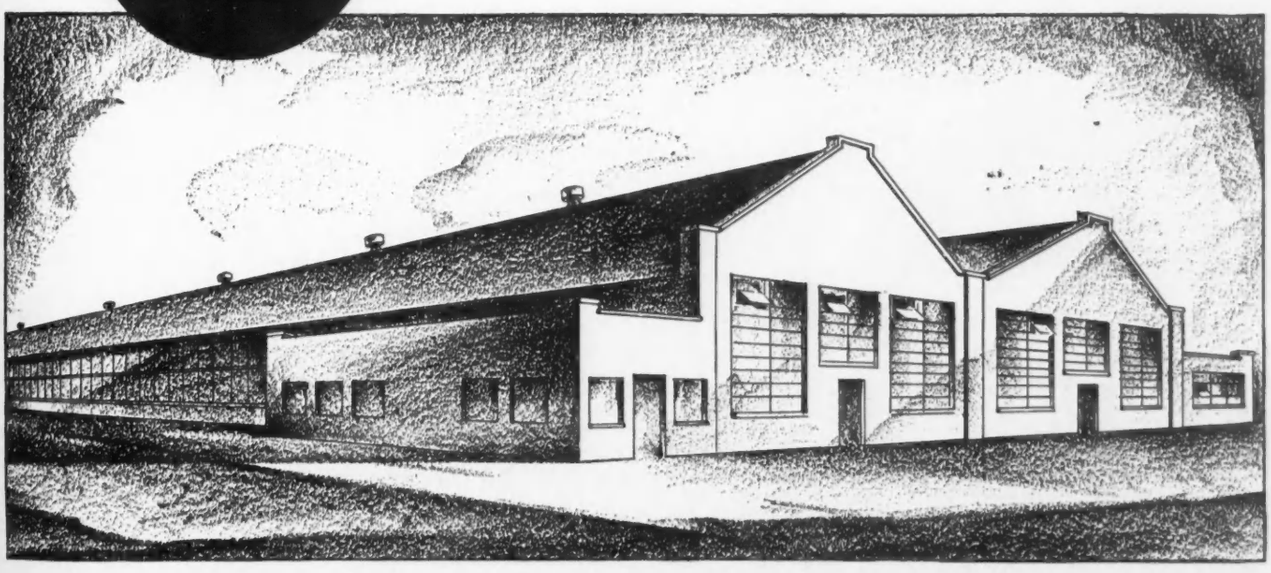

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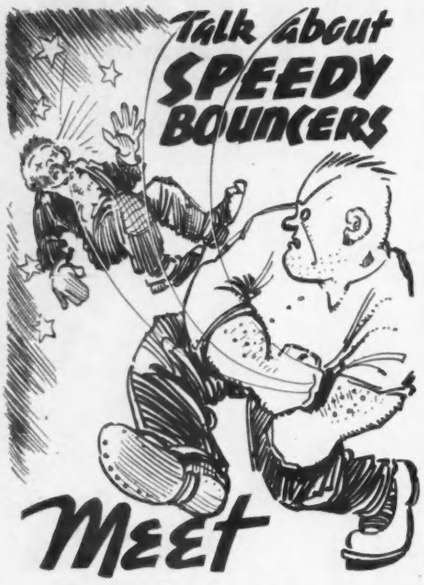

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Strike Possible

PALACIOS WILDCAT TO MAKE PRODUCTION TEST NEXT WEEK

GULF COAST

WEEKLY STAFF REPORT

Houston.—Evidently Glenn H. McCarthy has discovered another oil field in the Texas Gulf Coast. Foley 1, Palacios prospect, L. Goodwin Survey, was reaming to set seven-inch casing at the close of the week and probably will make a production test next week of Frio sands.

March 19 the following log of the well was announced: 7646 to 7656 feet, gas sand; 7660 to 7665 feet, gas and oil sand with four percent saturation; 7685 to 7690 feet, three percent saturation; 7808 to 7818 feet, two percent saturation; 7826 to 7834, gas and showing distillate; 7834 to 7840 feet, four percent saturation; 7855 to 7867 feet, oil sand; 7875 to 7891 feet, oil sand, three percent saturation; 7930 to 7955 feet, gas sand; 7975 to 7985 feet, gas sand; 8141 to 8155 feet, gas sand; 8184 to 8195 feet, gas sand; 8195 to 8199 feet, oil sand; 8205 to 8215 feet, oil sand, two percent saturation; 8370 to 8379 feet, gas sand; 8479 to 8488 feet, gas sand; 8496 to 8555 gas sand; 8555 to 8585 feet, oil sand. It has been reported that the test did not find any heaving shale.

Palacios prospect has been the scene of an exciting lease play for several weeks. McCarthy is reported to have around 4200 acres, Sun Oil Company 3400 acres, The Texas Company 676 acres, Strake Petroleum Corporation 1500 acres, and Walter Goldston has some acreage scattered in the area. Palacios prospect has been a much talked of geophysical prospect and has been worked by several majors. Hoard Exploration Company worked the area for Strake Petroleum Corporation.

Distillate Field Looms

Prospects of a new gas and distillate producing area looked bright last week when Texas Gulf Production Company's drill stem test on Gilllispie 1, Aldine prospect, Harris County, showed seven thribbles and two doubles of mud cut with distillate and a 240-pound pressure from sands at 7074 to 7104 feet. The test was made in 9½ minutes through quarter-inch chokes on top and bottom of the tool. At the end of the week coring continued below 7540 feet, encountering a number of sands and shale above the 7500 foot level, which contained odors of oil and gas. The previous week a drill stem test at 6924 feet showed salt water.

Wildcat Shows Water

Approximately five miles southeast of Louise, Wharton County, The Texas Company was drilling ahead below 5400 feet after a seven-minute drill stem test on Weatherer 1, E. T. R. R. Survey No. 100, at 5286 feet showed 11 thribbles of salt water through quarter-inch chokes top and bottom. Sand and sandy shale with odors of oil were encountered from 5204 to 5286 feet.

At Spanish Camp, Wharton County, Albert Plummer completed Logue 1 as a dry gas well at the end of the week. Logue 1, S. F. Austin Survey, No. 3, was drilled to below 8100 feet and plugged back to 3070 feet. Casing was perforated with 10 shots from 3015 to 3020 feet and the well came in flowing gas with a spray of distillate through a 3/16 inch choke, with a tubing pressure of 1100 pounds. This is the second gas well completed in Spanish Camp. The field was discovered by Felmont Oil Corporation.

Southeast of the first commercial oil producer at Five Corners, The Texas Company was running screen for a production test on Pierce Estate

TEXAS GULF COAST
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANAHUAC—		
Humble, Broussard 2	95	7085
Hebert Broussard 10	690	7085
Grippon 7	577	7064
Navarro Oil Co., Drought 1	600	7082
CONROE—		
J. K. Hughes, South Texas Development Co. 5	560	5127
GILLOCK—		
Coastal Pet. Corp., Maco Stewart 5	770	8838
GREENS LAKE—		
Sun, Hughes 7	¶¼	2736
HASTINGS—		
Frost, Lowery & Goldston, C. Brown 1	528	6083
Humble, Brown B-1	456	6130
Brown 8	386	6120
King 1	576	6080
PLEDGER—		
Ohio Oil Co., Saint 1	*	6952
RACCOON BEND—		
Humble, Sherror 18-X	456	4120
SEGNO—		
J. K. Dorrance, Wing 2	264	5197
SILSBEE—		
Republic Prod. Co., Brooks 6	395	6961
Brooks 8	160	6970
SOUTH HOUSTON—		
Stanolind, Drilling District 28	*	4701
TOMBALL—		
Humble, Faris 5	420	5541
Theis 4	264	5563
Tomball Townsite 1, Unit 13	480	5584
WITHERS—		
Texas Co., Pierce Estate C-21	240	5556
CHAMBERS COUNTY—		
Kirby Petroleum Co., Harden 1, West Cotton Lake area, Chambers County School Land sur.	*	6608
LIBERTY COUNTY—		
Diadem Oil Co., Pickett 1, Devers prospect, H&TB No. 10	*	7506

*Failures; †Junked; ¶Million cu. ft. gas.

B-6, J. Hyland Survey. The hole was drilled to 5572 feet and plugged back to 5345 feet and redrilled to 5554 feet. A drill stem test at 5551 feet showed salt water. Seven-inch casing was cemented at 5554 feet. If the well is a commercial producer it will be the second well to flow oil in the Five Corners.

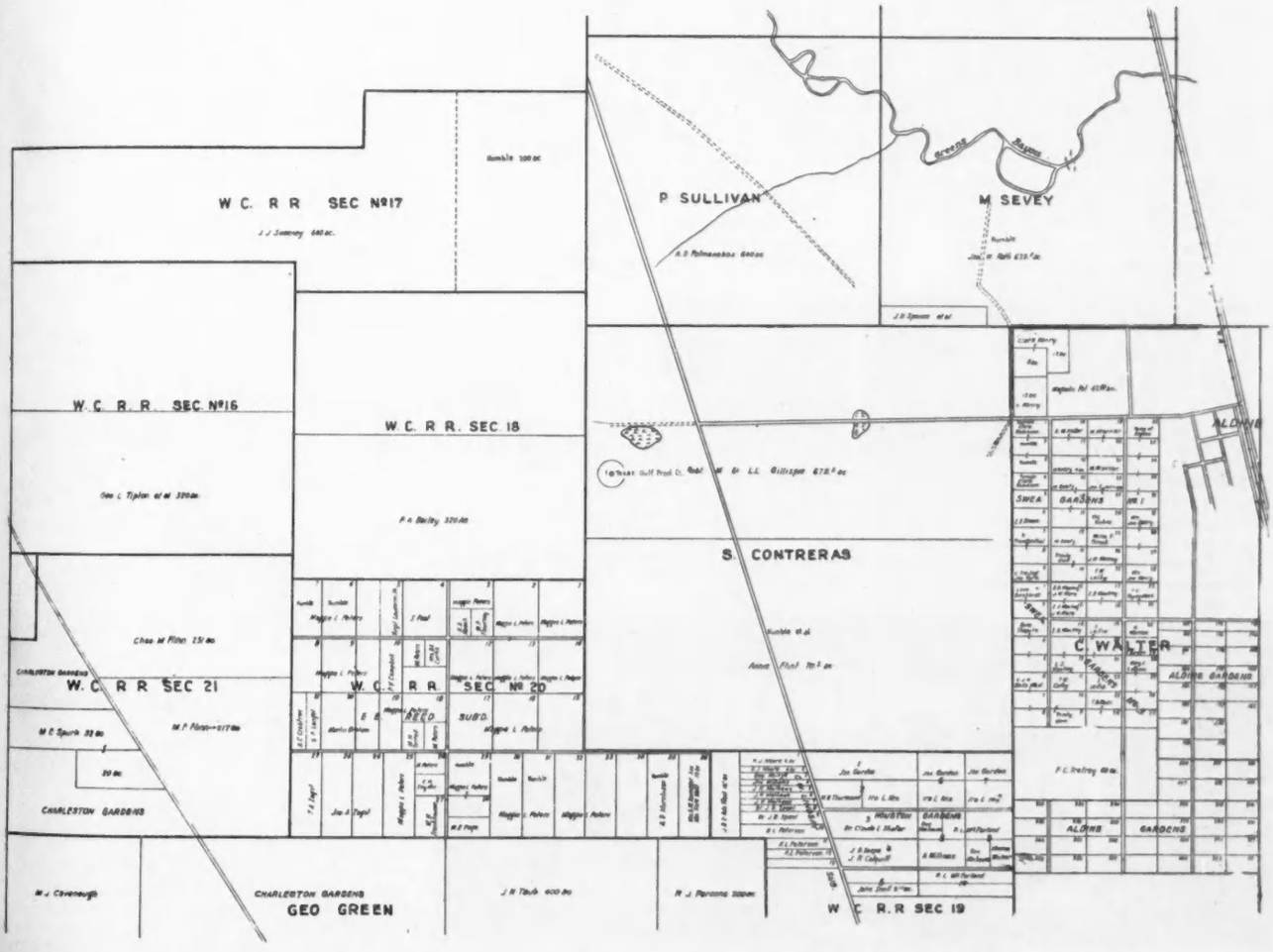
Commercial Production Possible

What may be the first commercial production at Cotton Lake, Chambers County, is Salt Dome Oil Corporation's Lawrence C-1, S. Barrow Survey. Casing was set after making a drill stem test from 6485 to 6503 feet. A drill stem test made in 2½ minutes (the testing tool slipped) recovered 800 feet of fluid showing oil, gas and mud and a 50-pound pressure.

Sun Oil Company was testing White 1-A, Seabreeze area, Chambers County at the close of the week. The hole was carried down to 8600 feet and plugged back to 8346 feet. At the end of the week the well was flowing one barrel of washwater per hour through a ⅛-inch choke, with a tubing pressure of 2650 pounds and a casing pressure of 2200 pounds.

Anahuac was extended 2600 feet south last week when Humble Oil & Refining Company completed Broussard 2, H. & T. C. Survey, Section 53, flowing 96 barrels of 34.5 gravity oil

Humble Pipe Line Company's pump station at Turtle Bay, Chambers County, moving production from that area to the Anahuac-Moss Bluff line.



Aldine area, Harris County, where distillate production is in prospect in Texas Gulf Producing Company's Gillespie 1. (Gulf Coast Engineering Company map)

per day through a quarter-inch choke, with a tubing pressure of 200 pounds. The hole was drilled to 7085 feet in sand showing oil after logging the top of the sand at 7054 feet. A string of 5½-inch casing was set at 7060 feet and 15 feet of screen was run. The well is on the south side of the field and a dry hole is between the producer and production.

Clinton Well Shows Gas

The second well at Clinton, Harris County, is showing considerable gas. Stanolind Oil & Gas Company's Oates 1, 4000 feet south of production, was coring in shale at 8069 feet and using 17-pound mud. From returns the mud was found to be reduced to 13 pounds in weight. The well is showing considerable "kick" and the operators are taking every precaution to keep it from blowing out.

In Liberty County, Diadem Oil Company abandoned Pickett 1, H. & T. C. Survey, No. 10, at 7506 feet after failing to find anything of commercial value. The well is in the Devers area of Liberty County.

Segno, Polk County, was extended 1100 feet east last week when J. K. Dorrance brought in the second producer. Wing 2, I. & G. N. Survey No. 15, made 66 barrels of fluid in six hours through a 3/16-inch choke from Cockfield formation at 5197 feet. Location for Wing 3 is between Wing 1 and Wing 2.

In Tyler County, Republic Production Company's drill stem test on Hurd 2, N. Hurd Survey showed 13 thribbles of salt water from 4980 to 4984 feet through quarter-inch chokes on top and bottom of the testing tool.

A new gas sand was found in Greens Lake, Galveston County, last week when Sun Oil Company completed Hughes 7 making 289,000 cubic feet of gas daily through a ⅛-inch choke from 2749 feet. Tubing pressure was 950 pounds; casing pressure, 1150 pounds. The hole was drilled to 4181 feet and was plugged back to 2736 feet. Seven-inch casing was set at 2712 feet.

Wildcat Making Production Test

Humble Oil & Refining Company's Jefferson Land Company 1, Cheek area, Jefferson County, was making a production test at the close of the week. Casing was perforated from 7764 to 7769 feet and screen set. The hole, originally drilled to 8458 feet in sand, was plugged to 8083 feet. While drilling to the bottom several sands showing oil and gas were encountered around 7800 feet.

Amelia was extended north and a new producing sand found when Glenn H. McCarthy completed Long 3, H. Williams Survey. The well was completed in sands from 5363 feet to 5384 feet. At the end of the week the well was flowing into burning pits and no gauge was available. Pressures were 600 pounds. A drill stem test of this sand showed 15 stands of pipe line oil in 10 minutes.

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2 DUE AT SWEEDEN

Laredo.—One producer was in process of completion and a second had cored the sand and was testing at Sweeden, Duval County, late in the week. These two wells, both offsets to the discovery, will bring the total number of producers for the pool to 3.

Hiawatha Oil & Gas Company's George Herberger 1, east offset to the first well, cored from 5875-87 feet, recovering only 5 feet, 1 of which was a hard cap and 4 feet good oil sand. An electric formation tester was run, following which a drill stem test is scheduled. The south offset to the discovery, Miller (Oskness) 1, was preparing to wash in after logging the sand at 5869-87 feet.

Four miles northeast of the above field, Frank Gravis' F. Vaello Puig, San Andres Grant, was drilling ahead below 2685 feet.

PLAN LINE

Mission, Texas.—Construction of a 15-mile 3-inch crude line from the Alta Mesa field, Brooks County, to the Southern Pacific Railroad at Rachal is contemplated by Standard Oil Company of Texas. The latter has 5 oil wells prorated to 500 barrels daily, but the market is limited to tank truck shipments to McAllen, where deliveries are made to Valley Pipe Line Company. An active drilling program is slated for the field. The proposed line to Rachal may be built and operated by Pasotex Pipe Line Company, El Paso, an affiliated unit of Standard Oil Company of Texas.

Distillate Strike

CONTINENTAL'S ABBEVILLE PARISH WILDCAT PRODUCES

Lake Charles.—A new gas and distillate producing district was opened March 14 in the Louisiana Gulf Coast when Continental Oil Company brought in Hebert 1, Abbeville, Section 20-12s-3e, Vermilion Parish, making 25 barrels of distillate and 4,500,000 cubic feet of gas daily through a 3/16-inch choke, with a tubing pressure of 2550 pounds and a casing pressure of 1500 pounds, from Miocene sands perforated from 7666 to 7675 feet after the well had been drilled into Oligocene formation at 12,216 feet.

Hebert 1 was spudded April 15, 1936, and 18⅝-inch casing was set at 248 feet. A string of 13⅜-inch casing was cemented at 1882 feet. A slight show of oil encountered from 7338 to 7350 feet contained salt water. A sand encountered from 7668 to 7682 feet showed 25 ohms and 95 milivolts on an electrical logging device, and from 7884 to 8000 feet a sand showed 17 ohms in the top 10 feet of sand, the balance being salt water. The hole was cored on down to 8881 feet, and from 8878 to 8881 feet a sand was encountered with a slight showing.

At 10,005 feet, Hebert 1 was the sixth well in the Louisiana Gulf Coast to penetrate formations below the 10,000-foot mark.

After drilling to 9293 feet is is reported that a sand encountered from 9290 to 9293 feet showed 20 ohms and 180 milivolts on an electrical logging device.

Hit Heaving Shale

At 10,947 feet a string of seven-inch casing was set, being the longest string of this size ever set. The crew was averaging around 20 feet a day at this depth and at 11,674 feet the bit went into heaving shale and the weight of the mud was increased to 13 pounds per gallon. The company was successful in drilling through the shale, and while drilling at 11,727 feet the driller hit a soft sand and Hebert 1 attempted to blow out. Preventors were shut. The weight of the mud was increased to 16 pounds per gallon. The drill pipe got stuck and a fishing job was encountered.

While 33 stands were left in the hole the well again attempted to blow out at 10,570 feet. The hole was plugged back to the bottom of the seven-inch casing and whipstocked at 10,790 feet. The hole was again plugged back and sidetracked at 10,812 feet. After reaching 11,727 feet the crew missed the sand which was found in the first hole. A sand was encountered at 12,197 feet and the hole was carried down to 12,216 feet.

Set 11,795 Feet of Casing

After reaching 12,216 feet, Continental Oil Company set two sections of 5-inch casing to 11,795 feet. A special string of 2½-inch tubing was hung and a test made of sands from 12,200 to 12,210 feet. The well was washed for two hours December 24, 1936, and it started coming in showing tubing pressure of 3650 pounds and casing pressure of 3350 pounds through a ¼-inch choke. Connections froze and the well was killed. While attempting to pull the 2½-inch tubing it became lodged and trouble was encountered while pulling tubing. Finally casing was perforated with 20 shots from 10,368 to 10,372 feet. The hole was swabbed down to 7500 feet and failed to show anything of commercial value. It was then plugged back to 7600 feet and cement was drilled out to 7682 feet. Casing was perforated with 36 shots from 7666 to 7675 feet but the well sanded up. The perforations were plugged. Another perforation with 28 holes from 7666 to 7675 feet and Hebert 1 came in making gas and distillate.

Hebert 1 encountered the following geological markers: Begenerina (Shoal River), 6378 feet, Amphistegina, 6530 feet, Siphonian, 10,510 feet, Clavulina, 11,506 feet. The deepest sands were supposed to be in the Vicksburg formation or from the Chicasahawhaye.

Wildcat to Test Again

Jefferson Lake Oil Company's Lake Peigneur 414, Jefferson Island, 12s-5e, was shut down at the close of the week preparing to perforate casing again from 6930 to 6940 feet in Miocene formation. It is reported that Lake Peigneur 414 perforated casing with 18 holes from 6930 to 6940 feet and on a drill stem test showed 3500 feet of oil and 10 stands of salt water in 20 minutes.

The hole was recemented and was again perforated with 10 holes from 6930 to 6940 feet. The hole was swabbed twice and the well began flowing fluid into a barge and was later turned into tanks. Lake Peigneur 414 flowed for approximately six hours, making from 30 to 50 barrels of fluid, mostly salt water. The pressure on the well rose as high as 200 pounds. The flare rose to 10 feet in the air. Later Lake Peigneur was killed and at the last report was shut down and would perforate casing again for another production test.

SOUTH LOUISIANA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BAYOU MALLET—		
Superior, G. Bradley 5	*	7233
EAST HACKBERRY—		
Texas Co., State 1, dr to 7989 ft, perforated 7629-39 ft	750	7639
GILLIS—		
Union Sulphur, Barbee Estate 13..	350	6735
VALENTINE—		
Pan American Prod. Co., Harange 2	360	6952
VERMILION PARISH—		
Continental, Hebert 1, Abbeville prospect, 20-12s-3e, dr to 12,216 ft, pb, perforated 7666 to 7675 ft	25	7675

*Failures; †Junked; ¶Million cu. ft. gas.

Wildcat Attempts to Blow Out

Another wildcat which was attracting considerable attention in the Louisiana Gulf Coast during the past week was D. & D. Oil Company's Lutcher Moore 1, northwest of Starks, Calcasieu Parish. At 8398 feet the wildcat attempted to blow out and the drill stem was stuck, causing a fishing job. This is the second time that Lutcher Moore 1 has attempted to blow out. The first time was at 7013 feet when oil and gas was shown on the mud ditches. The wildcat is reported to be in or near the top of the Cockfield formation. Discorbis was encountered at 4690 feet, Marginulina, 4890 feet, Frio, 4960 feet and Vicksburg at 6730 feet.

Shows Salt Water

Pure Oil Company's State Mallard Bay 1, Section 22-13s-3w, Cameron Parish, showed salt water on a drill stem test last week at 5955 feet and at the end of the week was shut down after recementing the hole. The test was drilled to 10,146 feet, being the fourteenth well in the Louisiana Gulf Coast to penetrate formations below the 10,000-foot mark. The hole was plugged back to 6923 feet, and 9⅝-inch casing was set at 7906 feet, was perforated with 10 shots. With the packer set at 5925 feet a 25-minute drill stem test showed one thribble of oil and gas cut mud, 30 thribbles of salt water, one single of salt water with a little oil and gas.

In the Big Lake area of Cameron Parish, Union Sulphur Company's Hebert 1 was plugged back to 6484 feet and waiting on cement. There was a twisted-off drill stem at 6665 feet. Oil sand was encountered from 6527 to 6536 feet.

After New Sand at Valentine

Pan American Production Company and Barnsdall Oil Company will test the 5300-foot sand with Harange 2-A, a new location which was made the past week at Valentine, 45 feet east of Harange 2 in Section 8-17s-20e. If the well produces from this shallow Miocene sand it will open a new producing sand for the field. Harange 2, 660 feet northwest of the discovery well, Section 8-17s-20e, made a 10-minute drill stem test of sands at 5325 feet and showed 1000 feet of sand, mud and oil. Approximately 50 percent of the 1000 feet recovered was oil. The test was made through ¼-inch choke and showed a 50-pound pressure. Harange 2 was drilled to 6952 feet, where 7-inch casing was set. On a production test Harange 2 made 21 barrels of 33 gravity pipe line oil per hour through ¼-inch choke, with tubing pressure of 750 pounds and casing pressure of 1000 pounds.

Longest String of 7⅝-Inch Casing

The longest string of 7⅝-inch casing ever set in the Louisiana Gulf Coast and probably in the world was set by The Texas Company's Horseshoe Bayou 1, Wax Lake area, Section 40-17s-9e, St. Mary Parish. The string was set at 10,975 feet with 1500 sacks of cement in 19 hours.

It is believed that The Texas Company will set a new world's record for

deep drilling in Horseshoe Bayou 1. No important sands are reported above 10,975 feet.

Herton Oil Company was coring in sand showing oil in Carter 5, Jeanerette, at 7039 feet at the end of the week. A sand with an odor of oil was encountered from 7014 to 7022 feet. The well will probably be carried on down and a production test made of the sands which have shown oil.

Location has been made at St. Martinville by Tide Water Associated Oil Company for Smedes 1, 1925 feet west of the northeast corner and 710 feet south of the north line of the lease in Section 57-11s-6e.

At Henderson The Texas Company was drilling below 8623 feet in St. Martin Land Company 9, Section 21-8s-7e, after coring sand with a showing of oil from 8546 to 8550 feet.

The Texas Company was making a production test on Rigolets 6, east of Lafitte. Rigolets 6 was drilled to 9479 feet and 7⅝-inch casing has been cemented at 9440 feet. Sandy shale showing oil was encountered from 9443 to 9457 feet and from 9457 to 9479 feet a sand was logged showing oil.

Another failure was reported at Bayou Mallet by Superior Oil Producing Company. Bradley 5, Section 37-7s-1e, was drilled to 7233 feet and abandoned.

Results Doubtful

RODESSA'S MARION COUNTY OUTPOSTS CONTINUE TESTING

NORTH LOUISIANA

WEEKLY STAFF REPORT

Shreveport. — Marion County's two outpost wells southwest of the Rodessa continued testing last week with results still in doubt.

Arkansas-Louisiana Gas Company's W. S. Ford 1, five miles southwest of Rodessa, was re-acidized after casing had been shot at 6107 to 6112 feet and started to flowing 40 barrels per hour, but the rate of flow dropped to 10 barrels per hour Wednesday night.

Holcomb, Thomasson and associates' Lizzie Henderson 1, R. Bennington Survey, 14 miles southwest of Rodessa continued to swab about six barrels per hour after a siphon was used. Operators are contemplating perforating again and setting a packer between the gas and oil horizons.

Meantime, two other tests in Marion County were reaching critical depths. Dunn and Fisher's Susie A. Chatten 1, A. de Los Santos Coy Survey, logged top of massive anhydrite at 5413 feet; elevation, 247 feet. It is checking 84 feet higher on the anhydrite contact than Ford 1. Arkansas-Louisiana Gas Company's Laura McIntosh 1, William Edmonson Survey, being drilled "tight", was drilling below 5513 feet. This test checked low on top of the Nacatosh.

United Production Corporation's J. W. Land 1, Robert Potter Survey, Cass County, 1½ miles south of oil production, was drilling last week at 6195 feet. It is a 6400-foot test to the red bed section below black shale. The Hill horizon is reported to have "pinched out" in this well.

Marr and Perkins' Hunter 5, Section 13-23n-16w, on the Louisiana side of the field, which has just started deepening to Travis Peak, has a fishing job at 6118 feet. Blackwell Oil & Gas Company is reported planning deepening to the Travis Peak one of its Neugent wells in Section 8-23n-15w, in the northeast part of the field.

R. W. Norton's Payne 1, SE SE 27-23n-16w, proposed 10,000-foot test south of the Rodessa, last week was coring at 8634 feet. Should this well find production in the Travis Peak, it would undoubtedly cause deepening of a number of wells in the field proper to that horizon.

Outpost Offsets Set Casing

Two tests offsetting the two recently completed Gloyd horizon producers 1¼ miles northwest of Rodessa production on the Louisiana side set final strings of casing last week. Both are operations of Standard Oil Company of Louisiana and are Armistead 1, total depth 6025 feet and Armistead 2, total depth 6039 feet, south and west offsets respectively to J. Edward Jones' Maidie Sharpe A-1, Section 4-23n-16w.

In the same section offsetting Jones' Maidie Sharpe B-1, the second oil well in the extension to the west, Gulf Oil Corporation supdded Campbell 1, Section 4-23n-16w. Jones is rigging up for two other tests in this section.

Gulf Oil Corporation last week bought the 76-acre J. L. Phillips tract, Section 5-23n-16w, one mile west of Jones' two producers. The lease consists of Lot H, Lot 1, Lot E, Lots 2 and 3, and Lots C and D of Lot 4.

Just south of its recently completed

Leasing Active

MARION COUNTY PERMITS ALLOW TOWNSITE DRILLING

Jefferson, Texas.—Several East Texas border counties, including those influenced by the Rodessa trend, are experiencing active leasing campaigns on the part of majors and independents.

Seven miles southwest of Jefferson, Magnolia Petroleum Company has leased approximately 2,500 acres around the B. C. Ragan Survey, Marion County.

In Cass County, northwest of Linden, the county seat, Arthur Burke of Shreveport has assembled a 6500-acre block around the southwest part of the Rebecca Cown Survey.

Continental Oil Company continues to add to its block eight miles south of Marshall, Harrison County, where J. B. Bond and associates recently took a block. Both blocks are in the vicinity of Rosborough Springs, near where a 5200-foot wildcat test was drilled in 1931. This area has been shot several times in the last year.

Northeast of Center, county seat of Shelby County, Edward C. Smith's block has been assigned to Humble Oil & Refining Company.

Townsite drilling in Jefferson, Marion County, three miles southwest of Holcomb, Thomasson and associates' Lizzie Henderson 1, R. Bennington Survey, Marion County, and 14 miles southwest of Rodessa production, was authorized in several permits issued last week by the Texas Railroad Commission.

Six Jefferson townsite permits were authorized as follows: M. C. George, Lemmons 1, center Lot 11, block 179, Alley subdivision; R. W. King and associates' Fee 1, center Lot 11, block 99, Alley subdivision; T. J. and A. S. Harvey, Fee 1 and Fee 2, on Blocks 123 and 127.

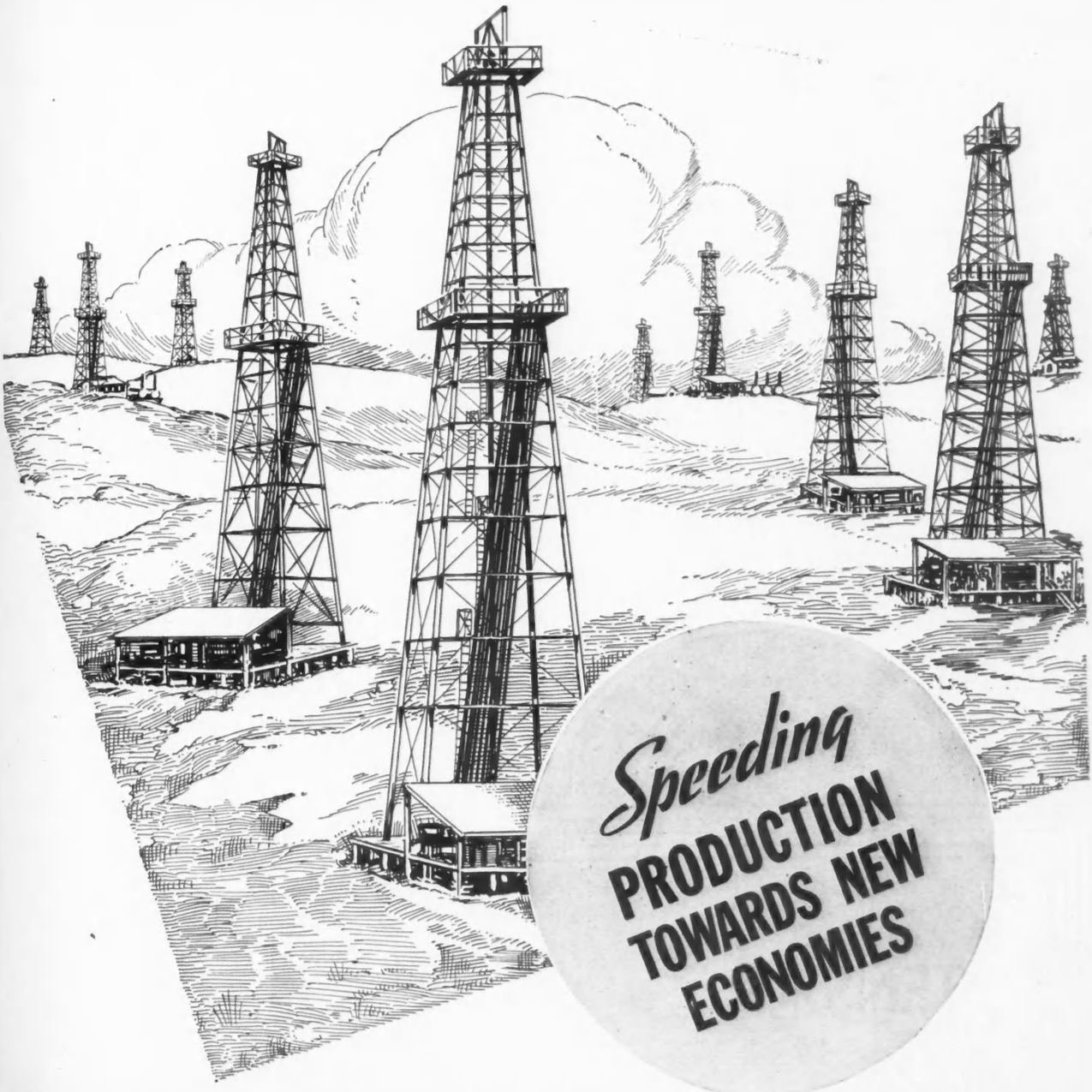
The first Rule 37 permit for a test along the Jefferson-Rodessa fault play was issued last week to Raymond Little, Greenville, Texas, for Mount Carmel Methodist Church 1, J. Grayson Survey, on a 1½-acre tract nearly three miles southwest of Arkansas-Louisiana Gas Company's W. S. Ford 1, Charles Grayson Survey, which is showing for an oil well.

G. N. Campbell has applied for permit for Schluter 1, Johnson Survey, Marion County, about 1½ miles southwest of Jefferson.

Just outside the southwest end of the Rodessa field proper in Cass County, the Railroad Commission has granted a permit to K. C. Lynch for Lewis 1, B.B.B. & C. Railroad Survey.

United Gas Public Service Company, which recently laid a two-inch line to Glassell and Glassell's two Glen Rose gas wells in Panola County, East Texas, one in the Mary S. Potts and the other in the H. Coleman Survey, is taking approximately 10 million cubic feet of gas daily from the two wells.

Southport Petroleum Company is buying the distillate from the two wells.



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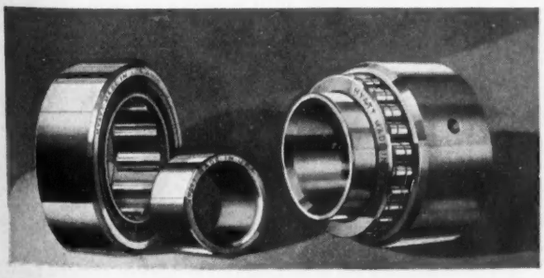

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Parker 1, SE NW 9-23n-16w, midway connecting link between the north offshoot area and the main part of the field, Standard Oil Company of Louisiana made location for Terry 1, 518 feet north and 657 feet west SEc NE SW 9-23n-16w, on a 32-acre tract.

Gas Distillate For Driscoll

Travis Peak gas-distillate production for the Driscoll district, Bienville Parish, was definitely assured last week when Lide, Greer and associates' J. D. Smelley 1, SW NE 13-16n-5w, was completed as an estimated 25 million cubic foot gasser with a heavy spray of distillate. Elevation is 239 feet. Base of massive anhydrite was logged at 5640 feet.

Production is from Travis Peak from 7202 to 7218 feet. Seven-inch casing was perforated with 30 shots. Total depth of the hole is 7693 feet.

Immediately after the well cleaned itself March 17, it was shut in for gauge. Rig will be moved immediately to W. J. Smelley 1, SE NW SW 18-16n-5w, a test for oil which had been sought in J. D. Smelley 1.

A year ago the same operators completed Davis Lumber Company 1, Section 12-16n-5w, as a gas-distillate well in the Glen Rose. Arkansas-Louisiana Gas Company has the gas rights on this block and Lide, Greer and associates the oil rights.

On drill stem test J. D. Smelley 1 had shown for a large gasser at 7163 to 7193 feet and from 7205 to 7240 feet.

North Louisiana Busy

Although only one new oil field has been opened in North Louisiana since Rodessa, that being the Lisbon district, Claiborne Parish, exploration and drilling activity in the northern section of the state continues at a high pitch and the opening of spring is expected to see increased drilling activity.

The Lisbon area, where four tests are nearing the basal Glen Rose horizon that produces oil at 5379 feet in E. T. Oakes, H. D. Easton et al's Patton 2, NE NE 1-20n-5w, Claiborne Parish, continues to see much exchanging of leases.

The general impression prevails that if and when the field's second well is completed this area will see a great spurt of activity.

Several in Play

United Gas Public Service Company continues to renew leases it has held for several years in Township 21 north, Range 5 west. T. L. James & Company, which negotiated with Oakes and his associates for the discovery well but have not bought it as yet, continue to lease in that area, having taken SE SE 1-20n-5w, and NE SE 36-21n-5w. Arkansas Fuel Oil Company took the west half of SE 3-21n-5w. Love Petroleum Company is planning an early test in SW SE 36-21n-5w. Farther east, Texas Trading Company of Tyler has been leasing in Township 20 north, Range 4 west, a locality in which Gulf Oil Corporation has been active since early January. Bevill and associates are planning an early test in Section 16-20n-5w, between the Lisbon oil well and the Sugar Creek gas field that produces wet gas from both the Glen Rose and Travis Peak.

29,058,824 BARRELS
Is Rodessa's cumulative production to March 1

Shreveport, La. — Total production from the Rodessa field to March 1, 1937, was 29,058,824 barrels, of which the Louisiana side of the field has yielded 23,623,191 barrels and the Texas side, 5,435,633 barrels.

On March 10 the field had accounted for 575 wells; 353 are on the Louisiana side and 222 on the Cass County, Texas, side. For the seven-day period ending on that date the per well average production on the Louisiana side was 132 barrels and on the Texas side, 193 barrels, giving the field as a whole a per day well average of 155 barrels.

Pipe line runs for the week preceding that date were 91,357 barrels, the daily average distribution being 92,142 barrels, the latter including the pipe line runs and 785 barrels to refiners and tank cars. Daily average production was 89,383 barrels, of which 42,779 barrels was from the Texas side. The total daily average from storage was 2,759 barrels.

Pipe line runs by companies for the week ending March 10 follow (in barrels).

Arkansas Pipe Line Company..	2,727
Gulf Pipe Line Co.....	15,800
Louisiana-Texas	1,885
Magnolia	27,684
Standard	21,393
Texas Pipe Line Co.....	5,604
United	16,264

6000-Foot Test Planned

George Shaw and associates are planning an early 6000-foot test on their block in Township 18 north, Range 1 west, partly in Jackson and partly in Lincoln Parish. Mid-Continent Petroleum Corporation has been active recently in Jackson Parish in an area where Seaboard Oil Corporation has a large block.

East and northeast of the Richland gas field, Richland Parish, R. W. Williams has leased a 16,000-acre block to United Gas Public Service Company, the acreage being in Townships 16 and 17 north, Ranges 8 and 9 west.

Standard Oil Company of Louisiana has been adding leases south of Cotton Valley, Webster Parish, and north of the Shongaloo gas field; Hunt Oil Company has been taking a few leases in Township 23 north, Range 9 west.

On the south flank of the Sabine Uplift in Sabine Parish, Arkansas-Louisiana Gas Company has assembled a block in Township 6 north, Range 12 west; and in Township 5 north, Range 12 west, Romaine and associates have assembled a 7500-acre block for an early proposed 6000-foot test.

Overlees and Davis are assembling a block in Township 21 north, Range 14 west, Bassier Parish.

Shell Petroleum Corporation continues to buy extensively in the Vivian and Hosston area, Caddo Parish, centering in Township 22 north, Range 15 west, a large block of leases having been placed on record last week. Loca-

TENSAS

If you were going down into the Louisiana Tensas Swamps for a deer hunt, you'd want to do your own shooting, of course. But what sort of a guide would you prefer? Native, New York, or sort of acclimated?

Damphool question, what? Which makes us glad we know the oil country we serve like a razorback knows his Tensas.

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SHREVEPORT, LOUISIANA

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New Iberia—Rodessa—Monroe—Cotton Valley—Turnertown—Greggton—Houston

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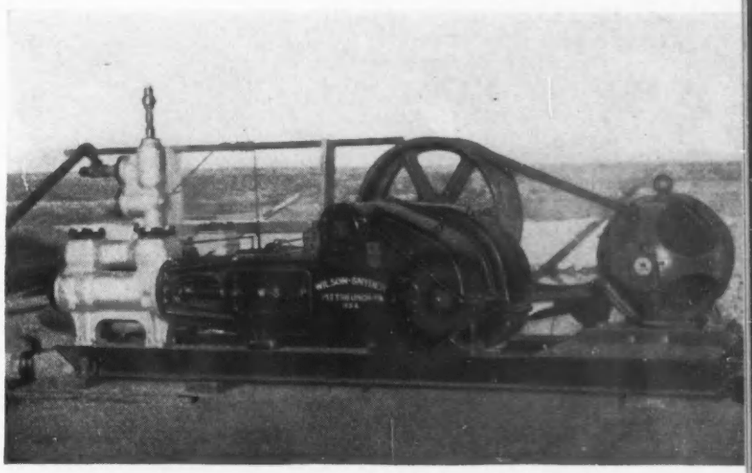
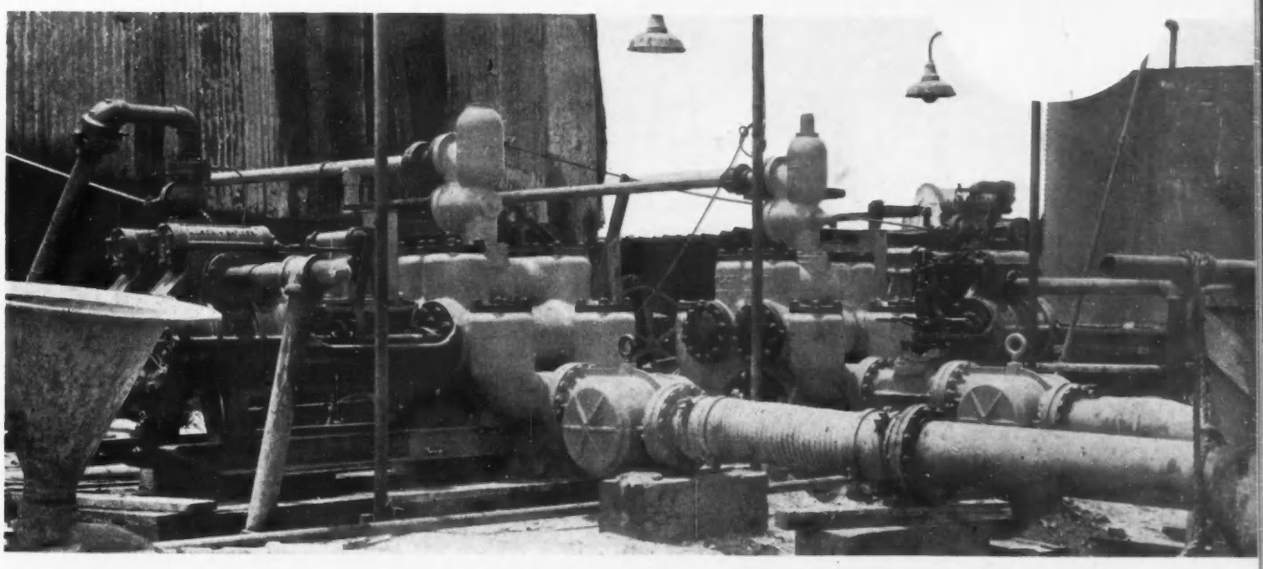
No. 6—6 x 16
No. 12—6 x 12
No. 12—5 x 12



(Below)—The No. 18 steam driven slush pump is famous the world over for its dependability. The two below were used in drilling to a depth of 12,786 feet.



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tion for a 6000-foot test in this area is expected to be announced soon.

Cotton Valley Wells Holding Up

Ohio Oil Company's R. L. Holloway 6, NE SW 23-21n-10w, Webster Parish, Cotton Valley field, completed last fall at 5550 feet in top of the Travis Peak to open that horizon as productive of oil, had produced 103,450 barrels of oil to March 1, 1937, and is averaging 530 barrels daily.

Up to the same date the same company's Bodcaw 1, discovery well of the lower Marine, had produced 7770 barrels and is averaging 310 barrels of oil daily, and its Coyle 1 has produced 10,470 barrels of oil and is averaging 220 barrels daily. Magnolia Petroleum Company's Ira Cox 5, Section 23-21n-10w, on a recent gauge produced 535 barrels of distillate in 24 hours, flowing through ½-inch tubing choke. It is producing from the lower Marine below 8000 feet.

Although disappointing in that it did not produce oil, United Gas Public Service Company's C. V. Davis 2, NW NW 23-21n-10w, showed for an estimated 75 to 100 million cubic foot daily gasser after a plug in 5-inch casing set at 8521 feet was drilled and the well tested at 8555 feet in lower Marine. The fact that the well, structurally the lowest in the field, did not show any water is regarded as most encouraging. Elevation was 201 feet.

Good Precedent Established

A precedent, which if followed by others would eliminate the necessity of court action to determine the difference between crude oil and distillate, was established recently in a North Louisiana area where gas-distillate wells have been completed on acreage where one firm owns the oil rights and another the gas rights. This question has come to the fore in a pronounced way in this district in recent discoveries, especially in Cotton Valley and the Bienville Parish districts. Recently an agreement was made between two companies where one owned the oil rights and another the gas rights on the same acreage and a contract to this effect signed: "Where the liquid produced is above 50 gravity the well will be classed as a gas well, and where it is 50 and below it will be classed as an oil well, regardless of quantity or color."

NORTH LOUISIANA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CADDO PARISH (Rodessa)—		
Standard of La., Hardin 2, 16-23n-16w	476	5988
United Gas, Mitchell A-1, 17-23n-16w	580	5910
Mitchell 4, 20-23n-16w	585	5935
CLAIBORNE PARISH—		
Max Hirsch et al, C. O. Ferguson 1, 29-22n-6w	*	6147
CADDO PARISH (Pine Island)—		
Stanolind, Dillon Heirs 117, 14-21n-15w	50	1683
DE SOTO PARISH—		
W. F. Hyde et al (later L. S. Fite et al), Ramsey 1, 36-11n-11w	*	3027

*Failures; †Junked; ¶Million cu. ft. gas.

DEEP TEST RUMORED
Marine and Phillips may drill in Union County

WEEKLY STAFF REPORT

El Dorado.—Reports are that Marine Oil Company, with Phillips Petroleum Company assisting, will drill a deep test soon on acreage leased around Section 24-18-12, Union County, Arkansas.

In Columbia County, Harper and associates are assembling a block in Township 16, Range 22, and in La Fayette County, Munn and Earl have taken a 5,000-acre block centering around Section 15-15-27 for a proposed 3500-foot test.

Standard Oil Company of Louisiana is reported to have taken a block assembled by A. E. Stoltz in Township 19, Range 16, which was recently gone over by a shooting unit.

12 ARKANSAS PERMITS

El Dorado.—Twelve drilling permits for the southwest part of Miller County, Arkansas, just across the state line from the Rodessa field were issued Thursday by the Arkansas Board of

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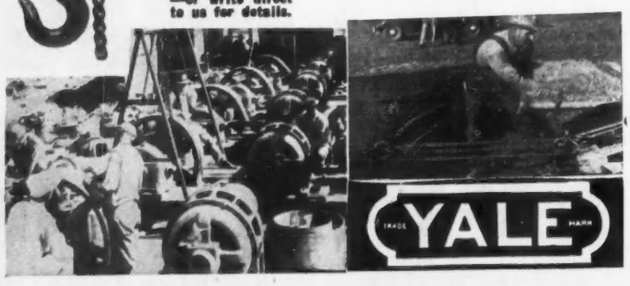

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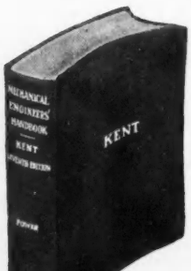

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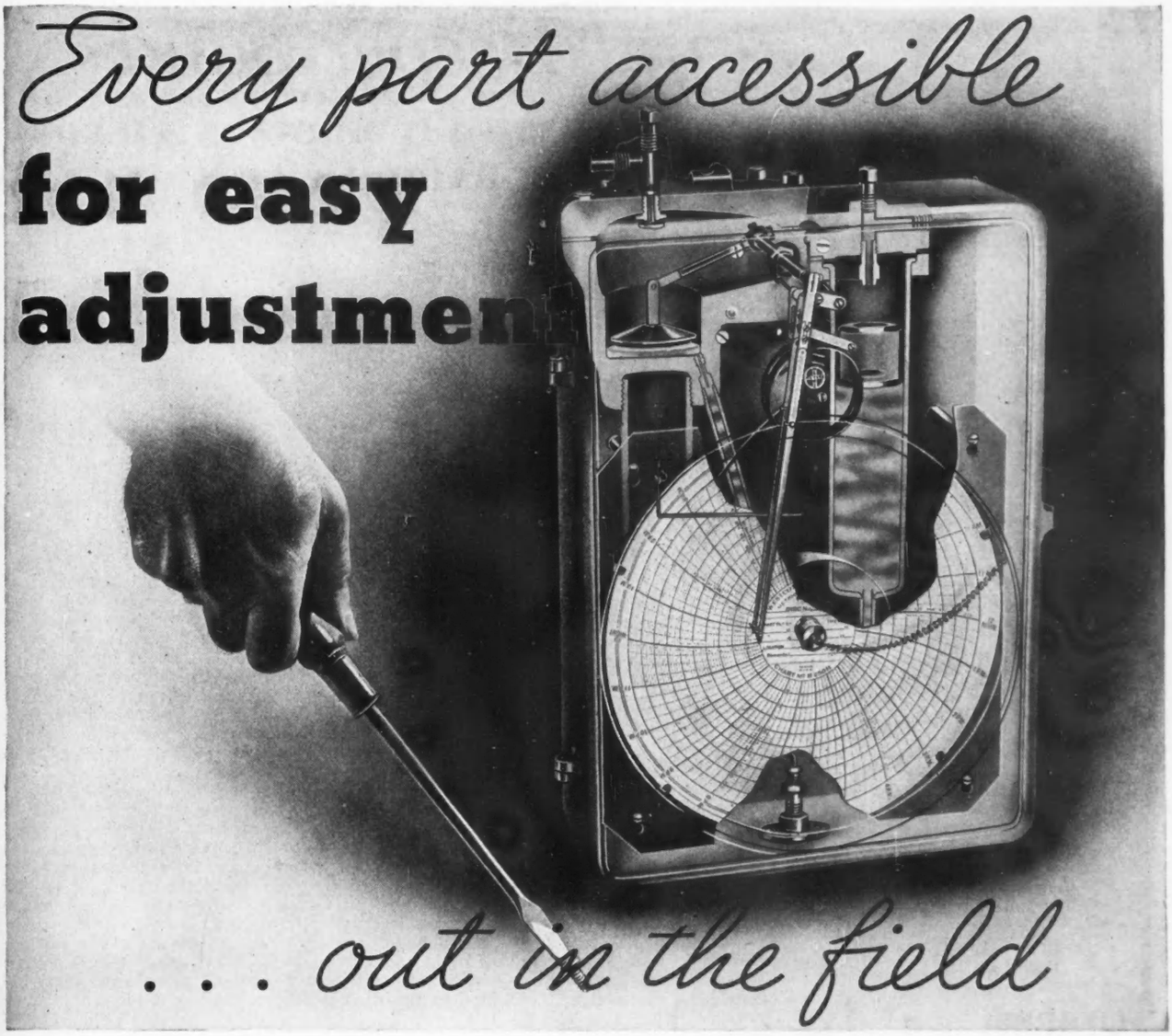

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Conservation. Ten of the permits were issued to W. M. Layton, formerly of New York, now of Texarkana for tests on the Rector lease in Section 17-20-28; one permit was issued to Allred and Allred, and another to De Frazier et al. All are for tests in Section 17-20-28.

El Dorado, Ark.—Lion Oil & Refining Company was preparing to run formation tester in Morgan 1, Section 18-18-17, Union County wildcat, after logging limey shale and sand from 5451 to 5466 feet in what was identified as Travis Peak formation. Some oil and gas saturation was reported in this core.

ARKANSAS STRIKE

Union County 'cat fills with Upper Permian oil

El Dorado.—Lion Oil Refining Company's Morgan 1, wildcat in Lot 1, south half Section 18-18-17, Union County, Arkansas, March 18 tested a hole full of 38 gravity oil at 5547 feet in a sand series of Upper Permian. The formation tester was open 15 minutes with ¼-inch chokes at top and bottom. The hole is being prepared for another test.

Top of Glen Rose was 3255 feet, top of Travis Peak was 4030 feet. Elevation is 219 feet.

Tulsa.—The Barnsdall Refining Company has awarded Frick-Reid Supply Corporation of Tulsa the contract for construction of a 6000-barrel-a-day oil refinery at Corpus Christi, Texas, according to an announcement made here March 2. Cost of the refinery, although not made public, is estimated at around $3,500,000. Plans are rapidly taking shape, company officials stated.

CALIFORNIA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
DOMINGUEZ—		
Shell, Reyes 47	50	5485
EAST COYOTE—		
Braham-Loftus Oil Corp., Perkins 1	125	4326
RICHFIELD—		
Union, Chapman 43	175	3425
WILMINGTON—		
Pacific Western, Murphy 1	400	3580
Patten 1	200	3543
GRAPEVINE—		
Reserve Oil & Gas Co., Tejon 33-2	300	4505
KERN FRONT—		
Honolulu Oil Corp., No. 68	160	2857
No. 17	200	2789
MOUNTAIN VIEW—		
Mohawk Pet. Co., Clendenen 1	240	5950
MOUNT POSO—		
Ring Oil Co., Knapp 3	100	1480
PREMIER—		
Roscoe & Stanley, Newhope 3	350	2684
ROUND MOUNTAIN—		
California Western, No. 2	300	2084
ADAM—		
Union, Adam 2	4290	3791
EL CAPITAN—		
Shell, Covarubias 1-23	340	1307
GATO RIDGE—		
Barnsdall, Tognozzini 9	1100	2465
TEN SECTION—		
Standard, K.C.L. 9-1	*	8519
SAN LUIS OBISPO COUNTY—		
Union, Porter 1	*	5010
SANTA BARBARA COUNTY—		
E. H. Moore, Union Sugar A-1	*	8091

*Failures; †Junked; ¶Million cu. ft. gas.

Find Deeper Sand

7645-FOOT HORIZON YIELDS 1500 BARRELS AT ROSECRANS

WEEKLY STAFF REPORT

Los Angeles.—Barnsdall Oil Company's O'Dea 10, in the proven area of the old Rosecrans field in Los Angeles Basin, has been completed in what is considered a new deep zone at 7645 feet for 1500 barrels of 36 gravity oil in addition to 4,000,000 cubic feet of gas. Pressure on the tubing is 1000 pounds; casing pressure, 1400 pounds. Several years ago a deeper zone was tapped, and wells came in for good production, but within a few days had to be placed on the pump. The new zone is considerably deeper than the old high gravity zone, tapped at slightly better than 7500 feet. If this new well holds up fairly, it means considerable new drilling.

Deepest In Southern California

Union Oil Company's Bell 100, deep test at Santa Fe Springs, has reached 10,300 feet. Oil sand has been cored since passing the 10,000 foot mark, but it is understood that drilling will continue, probably to as much as 12,000 feet, if no mechanical trouble is had, unless a very rich producing zone is picked up before that depth is reached. This hole now has the record of being the deepest well ever drilled in Southern California. It is further understood that the hole is not over 2 degrees off vertical.

Union Oil Company's Adam 2 in the new Adam area in Santa Barbara County was completed March 13 for 4290 barrels of 15.2 gravity clean oil with bottom at 3791 feet, and two days later was beaned back to 2930 barrels. The well started out making slightly better than 1,000,000 cubic feet of gas with 130 pounds on the tubing and 100 pounds on the casing. A string of 8⅝-inch casing was cemented at 2713 feet. Union Oil Company's Adam 1 was the discovery well for this new area. Both wells were completed in the Miocene formation. Vincent 2, in the same general area, will be the next to spud. Two offsets are to be drilled on the western boundary of the Union's Adam holdings. To the west of the present proven area the company has spudded O'Donnell 1, Paderewski ranch.

Wildcat Gas Completion Due

Up in Sutter County, near the San Francisco bay region, Buttes Oilfields' No. 4 wildcat test has reached 5200 feet and will be completed at that point. January 11 this hole blew out, and gas was thought to be escaping from the outside of the last casing cemented. The casing was recemented and the hole tested good for about 15,000,000 cubic feet of gas. Mud weighting material was used before the production test was attempted. No. 4 is to be made into a gas well, and either No. 3 or No. 5 will be drilled deeper in search of oil.

Strike Near Long Beach

In the Davidson area near Long Beach Hilldon Oil Company's Flood Control 1, Section 11-4-13, located 3600 feet northwest of the nearest production in Long Beach, with 5¾-inch cemented at 5672 feet, showed good for 80 barrels of 24.6 gravity oil, cutting 2 percent mud, on an 18 hour pumping test. Methods of pumping are being changed in expectation of showing an increase in daily production. Some are of the opinion that this well has opened a new structure; others feel it is an extension of Long Beach.

In El Segundo, Union Oil Company's El Segundo 1, depth 7685 feet, with 7⅝ inch cemented at 7646 feet, showed good for 1000 barrels of oil on a swabbing test. Later the test showed between 1200 to 1500 barrels. The flow is through a 21/64 inch bean with a pressure of 40 pounds on the tubing and 560 pounds on the casing. Top of the Nodular was found at 7630 feet and top of the conglomerate was picked up at 7658 feet, top of the oil sand. Twelve tests are drilling in this field.

Deep tests in the general Rosecrans area in Los Angeles are nearing the point for production tests. Shell Oil Company's McKinley 1, Section 20-3-13, depth 7744 feet, with 8⅝ inch cemented at 7458 feet, on test was found wet at the shoe and is now standing recemented at the shoe.

Among the wildcats of the state, Tide Water Associated Oil Company's Kern County Land Co. 1, Section 30-29-25, Kern County, is coring ahead in hard gray shale at 8822 feet. Near Sargent in San Benito County, the same company is drilling ahead in Murphy Ranch 1, Section 5-12-4, with bottom at 6460 feet in hard gray and brown shale. A string of 8⅝ inch was cemented at 6382 feet, but did not effect a perfect shut off.

In the Grapeview area of Kern County, Ohio Oil Company's Title Insurance 1, Section 21-11-19, is being cored ahead in shale at 7002 feet. At Pyramid Hills in Kings County, Tide Water Associated Oil Company's Avenal 2, Section 35-23-17, is coring at 2343 feet in poor oil sand.

Cores Oil Sand

At Greeley, Kern County, a new productive area, Standard Oil Company's Kern County Land Co. 11-2, Section 20-29-26, an offset to the discovery well, cored the top of oil sand at 7735 feet

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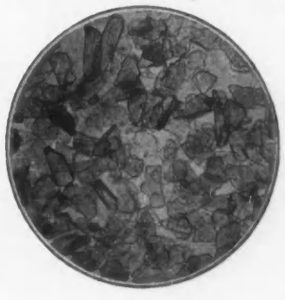

Reproduction of the micrograph at the left shows the interlocking of the flakes of the internal reinforcement used by Barrett. By laminating with the waterproofing agent, they give Barrett Pipe Line Enamels unusual toughness and resistance to soil stresses.

For pipe of large diameter, The Barrett Company will furnish equipment required to revolve pipe and spread enamel.

and is coring ahead at 7765 feet, still in oil sand.

Wilshire Oil Company has a lease on 450 acres in the Southwest Bakersfield area in Kern County and will start a wildcat in a short time. The first hole will be drilled 330 feet north and 330 feet east from the southwest corner of Section 36-29-27. Near Betteravia in Santa Barbara County, E. H. Moore's Union Sugar 1, Section 25-10-35, with bottom at 8091 feet, will be abandoned.

Watch Pure Tests

ILLINOIS BASIN AREA HOLDS INTEREST IN EASTERN FIELDS

WEEKLY STAFF REPORT

Pittsburgh, Pa.—Pure Oil Company's tests in the basin area of Illinois continue to command eastern fields' interest. Closely following the Eugene Weiler 1 into the Chester series at approximately 2200 feet, reported two weeks ago, came the George Bradley well in Bedford Township, Wayne County. Despite showings of from 75 to 100 barrels a day at this level, the wells are to be drilled to a depth of between 6000 and 7000 feet. The Weiler well is in Clay City Township, Clay County.

Activity in the Hocking Valley district of Ohio has increased considerably during the past two weeks due to the recent 10-cent advance in the price of Pennsylvania grade crude. Operators, expecting still further advances during the next few months, are laying plans for secondary methods of recovery from existing wells. Repressuring would probably be the method used, as water flooding is unlawful in Ohio.

Plan Tests to Trenton

Plans are also being made to drill some tests into the Trenton formation, approximately 1000 feet below the depth of wells now being drilled in the Hocking Valley district. If these are successful, considerable exploration of lower horizons in this district will undoubtedly follow.

Small streams flooding their banks are hampering Indiana field activity. Access to many locations is difficult.

In the Oriskany gas field of West Virginia, the test of Mullins Gas Company on the J. F. Corke farm showed about 2,000,000 feet a day with the tools in at 4911 feet. In Poca district, Kanawha County, the test extends the pool a half mile southwest of the Facemyer, which was also a good gas well.

An outpost location made in the Oriskany field last week was that of Godfrey L. Cabot, Inc., on the J. E. and M. D. Good farm, three-quarters of a mile souh of Sissonville, Poca district. It is about 2½ miles west of the well on the W. P. Moss farm.

Two Deepened Successfully

Two deepening operations were carried to a successful conclusion in West Virginia last week. In Lincoln County, Martin Gas Company's No. 1, on the Black and Yeager lease in Sheridan district gauged 4,362,000 feet of gas at 2640-3227 feet. The Big Injun was at 1470-1540 feet; Berea 2011-2024 feet, and Brown Shale 2630-3227 feet.

The other successful deepening operation was completed by Columbian Carbon Company, with John Bland 1, New Milton district, Doddridge County. It was extended from the salt sand, where it had been an old producer, to the Big Injun sand at 1750 feet. It gauged about 1,000,000 feet of gas a day. Hope Natural Gas Company will deepen Lavina Fetty 3 in Mannington district, Marion County.

14 BUCKEYE WELLS

Mammoth's Jackab 1 flows 720 bbls. initial

WEEKLY STAFF REPORT

Mount Pleasant.—Seven completions in new Buckeye Township, Gladwin County, pool boosted the total to 14 commercial wells with an aggregate production of 15,800 barrels daily.

Mammoth Producing & Refining Company's Jackab 1, SE NE SE 10-18n-1w, logged Dundee lime at 3542 feet and produced 720 barrels the first 24 hours on production from 3616 feet. Deepened to 3623 feet, production reached a peak of 3210 barrels and declined back to 1900 barrels three days later. Jackab 1 is the largest producer in the new area to date. Mammoth set a record when $65,300 was paid to Daily Crude Oil Company for the 40-acre Jackab lease, including the well.

Fortney Oil Company's Miller 1, Section 15, ½-mile north of the discovery, showed a 26-foot drop in structure and was made commercial pumper of from 50 to 75 barrels only after a 2000-gallon shot of acid.

C. L. Maguire Inc.'s Foster 1, SW NE SW Section 15, a mile west and half a mile south of the Wicklund discovery, failed to show commercially and is being abandoned at 3802 feet in Monroe lime.

Production Decline Sharp

While structure wells are showing from 15 to 30 feet of saturated limestone and a Dundee thickness ranging from 150 to 200 feet, a sharp decline in production has been general of wells so far completed.

Tests now drilling from one to two miles out are expected to define the area's productive possibilities within the next three weeks.

Forty-two tests were drilling early this week in the immediate area of the discovery.

No definite steps had been taken relative to a restricted development and the production program for the field, discussed in two earlier meetings. A later conference of operators was indefinitely called off.

Simrall Pipe Line Corporation cut the price of Buckeye crude from $1.42 to $1.39½ on March 16, and Pure Transportation Company, only other major buyer in the field at present, was expected to follow suit.

MICHIGAN

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
GLADWIN COUNTY—		
M. F. Whitehill, Rachel 1, ne ne sw 11-17n-2w	25	3896
F. T. Schooneas Tr., Yager 1, sw ne ne 36-17n-2w	110	3906
Mammoth Pro. & Ref., Jackab 1, se ne se 10-18n-1w	3200	3623
State B-1, sw se se 11-18n-1w	1950	3636
State A-2, nw ne nw 14-18n-1w	1470	3651
J. V. Wicklund, State A4, nw sw se 11-18n-1w	1400	3635
Marshall Bauman, Wager 1, ne sw nw 14-18n-1w	390	3660
Fortney Oil Co., Miller 1, ne ne ne 15-18n-1w	110	3679
C. L. Maguire, Inc., Foster 1, sw ne sw 15-18n-1w	*	3805
Rex Oil Co., State 1, sw ne se 11-18n-1w	1300	3651
GRATIOT COUNTY—		
R. F. Ide, Cooley 1, c nw sw 3-10n-4w	¶4	995
Wiser Oil Co., Plank 1, c ne se 5-10n-4w	¶½	1002
MIDLAND COUNTY—		
Pure Oil Co., Bond-Root 19, s½ sw ne 3-13n-2w	50	2940
Eldridge B1, s½ ne nw 7-13n-1w	65	3444
MONTCALM COUNTY—		
Burnstein Oil Co., Keel 4, nw ne se 35-11n-5w	66	3215
MUSKEGON COUNTY—		
West Michigan, Thompson 1, c se 5-9n-14w	¶1	1241

*Failures; †Junked; ¶Million cu. ft. gas.

DELAY DECISION

Coal interests oppose gas distributor's application

Harrisburg, Pa.—Decision on the charter application of the Pennsylvania Gas Transmission Company, which seeks authority to furnish natural gas from Western Pennsylvania and West Virginia fields for distribution by five United Gas Improvement Company affiliates now selling manufactured gas, will probably not be made for three months, it was learned here this week.

Following a hearing in which the application was opposed by anthracite coal interests, Commonwealth Secretary David L. Lawrence turned the transcript of the hearing over to Governor George H. Earle, who holds the authority to grant

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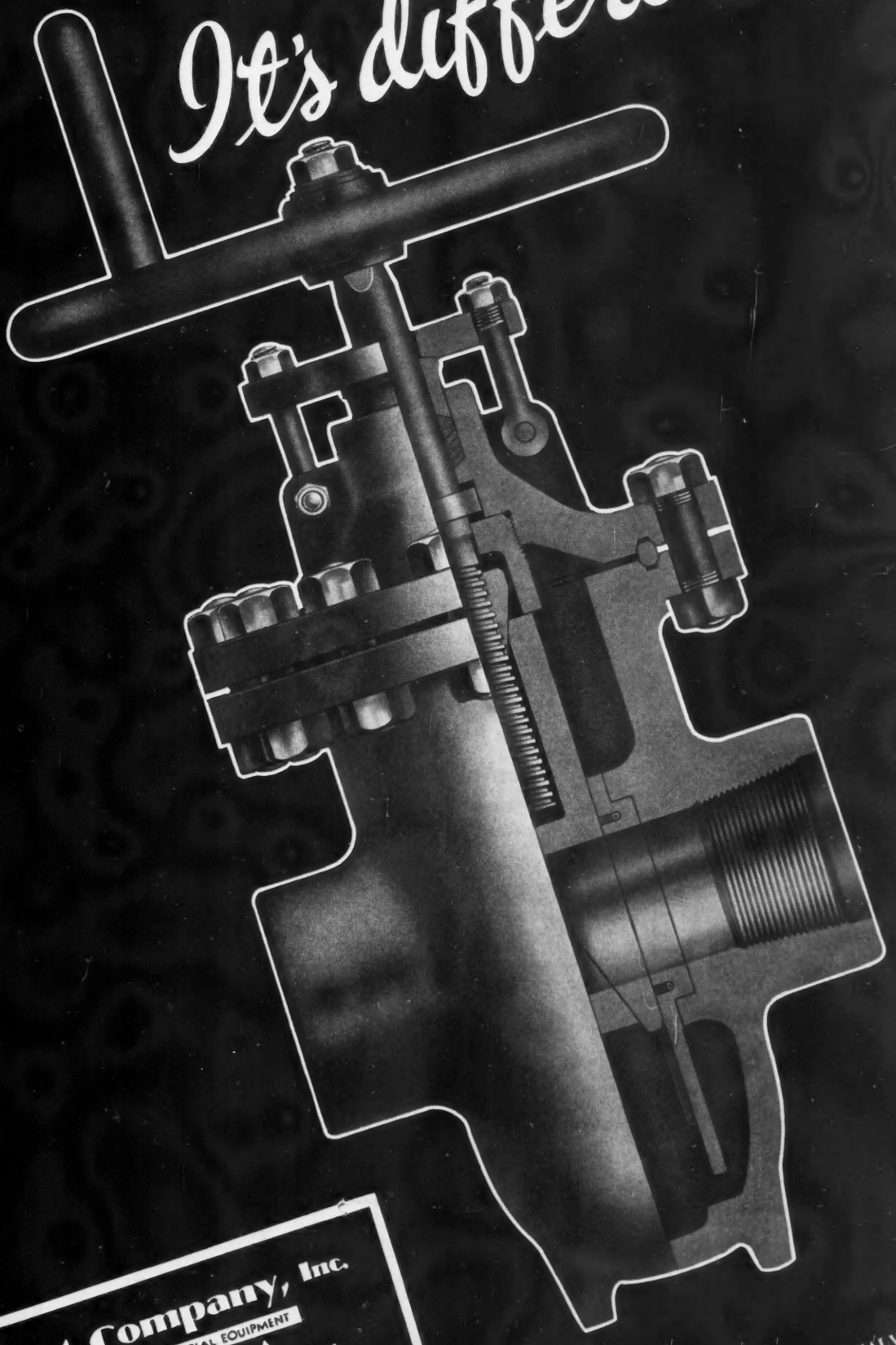

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or reject the charter application. Lawrence indicated a decision would probably not be forthcoming until a legislative committee named to investigate the "bootleg" coal problem has made its report, in about three months.

Lieutenant Governor Thomas Kennedy, acting as secretary-treasurer of the United Mine Workers, opposed granting the charter at the recent hearing, maintaining introduction of natural gas into central Pennsylvania would increase unemployment in the hard coal fields and further complicate the "bootleg" mining problem. He declared anthracite could not resist any further competition from a "larborless industry."

Representatives of the company cited results of questionnaires in which 94 percent of the domestic customers who would be affected by the proposal said they wished natural gas piped in. The economy of gas over coal for domestic heating purposes was cited.

Pending action on the charter application, the public service commission is holding applications of the Transmission company to pipe natural gas into Harrisburg, Allentown, Reading and other central Pennsylvania cities.

The proposed pipe line would traverse nine Pennsylvania counties.

BUY OIL PROPERTY

Sloan & Zook purchase Willetts Allegany lease

Bolivar, N. Y.—Sloan & Zook, extensive Bradford field operators, have acquired the remainder of the Willetts estate oil property in Allegany field consisting of 510 acres with 78 producing wells having a daily production of about 20 barrels. In June, 1936, these operators leased about 300 acres of the Willetts estate property at one-quarter royalty. Bradford Producing Corporation, a subsidiary which has been developing the first parcel for a number of months, will develop the newly acquired section on the same basis. Five-spot drilling operations are to be started as soon as possible, and a pressure plant is to be built on the lease. The property is in the largest undeveloped flood territory in the Allegany field.

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GOOD FOR 15 YEARS

Bradford field records 48% drilling increase

Bradford, Pa.—Prediction that the Bradford oil field will continue to produce profitably for at least 15 more years, and that at the end of that time some 350,000 barrels of oil will remain for recovery by mining or some other method not now in use, was made here last week by engineers of the Tide Water Oil Company.

The report showed that 3,750 acres of oil land in the field were depleted last year.

Drilling of new wells in the field during 1936 showed an increase of 48 percent over the previous year. Active wells, at the start of 1937, totaled 80,500 in Pennsylvania, 14,650 in New York, 13,600 in West Virginia and 12,450 in Ohio. Production of Pennsylvania crude during 1936 gained six percent over 1935.

EASTERN FIELDS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
PENNSYLVANIA		
BEAVER COUNTY—		
Freshwater & Reed, Walter Laughlin 1	*	....
BUTLER COUNTY—		
Turner & Wall, W. S. Waldron 1	2	1310
GREENE COUNTY—		
Philadelphia Oil Co., Maria Jacobs 6	1	3046
B. L. Frye, Milton Martin 1	¶⅓	2320
Smith McCracken, Willis A. Campbell 1	*	3469
WASHINGTON COUNTY—		
Perrin & Co., B. A. Bonham	*	2912
Bloom et al, Clyde Hinerman 1	*	2948
W. H. Davis & Co., W. H. Davis 10	¶	3097
Keystone Gas Co., Lawrence Cowden 1	¶	1400
North Star Oil & Gas Co., Martin Perchine 1	¶	910
Tri State Oil & Gas Co., Samuel McCreight 1	¶	941
ILLINOIS		
BOND COUNTY—		
F. S. Ray et al, Harry Mitchell 1, nw ne sw sec 30-6n-3w	¶	951
CLINTON COUNTY—		
Newton et al, Grank Gross 1, se ne sw sec 5-1n-3w	25	1025
CRAWFORD COUNTY—		
West Union Oil & Gas Co., Ducommon 1, se se nw sec 28-6n-12w	25	1528
Dinsmoor Oil Co., W. E. Ewing, 34-C, se nw sec 31-6n-11w	3	945
Tide Water Associated Oil Co., H. F. Henry 14, ne se sec 10-7n-13w	10	987
WABASH COUNTY—		
Mahutska Oil Co., Mark Madden 10, nw ne sec 7-1n-11w	80	1448
INDIANA		
DECATUR COUNTY—		
T. E. Castor, Daniel Hull 1	¶	986
OHIO		
ATHENS COUNTY—		
Chartiers Oil Co., M. L. Stratton 2	*	3588
Moore Farm Oil & Gas Co., Fred S. Moore 2	2	1174
Chartiers Oil Co., Eileen Stratton 1	*	3613
BELMONT COUNTY—		
John L. Gilingham, Sarah Lee 81	¶	774
Natural Gas Co. of W. Va., Albert Smelko 1	¶	1767
COSHOCTON COUNTY—		
H. E. Perkins, Matilda Fortune 1	*	3182
GUERNSEY COUNTY—		
Cambridge Glass Co., G. E. Slaughter 4	¶¼	1045
George Kernodle, C. B. Hutchinson 1	¶	1157
Roushauson & Ridgway, Gillespie Heirs 2	¶½	1178
HOCKING COUNTY—		
Joe Thomas & Co., W. W. Ackers & Co. 12	5	3472
Kelch Brothers, Frank Edwards 1	*	1565
Joseph Thomas, M. Ackers Heirs 2	15	3540
HURON COUNTY—		
McCorkill & Co., W. & M. Bellamy 1	¶	307
KNOX COUNTY—		
Ohio Fuel Gas Co., C. L. Fawcett 1	¶	3986
Upham Gas Co., Julius Smith 1	¶	845
LICKING COUNTY—		
Ohio Fuel Gas Co., Mary McCracken 1	*	2722
LORAIN COUNTY—		
C. J. Daugherty, E. Nichols 1	¶	2295
MEDINA COUNTY—		
Litchfield Development Co., C. & A. Hines 1	¶	4682
Obermiller Bros., William Szoke 2	¶½	2779
MEIGS COUNTY—		
Ohio Fuel Gas Co., Bart Romine 1	¶	1739
Roberts & Co., Jennie Jacks 3	¶	928
Roy Holmes & Co., Schuyler Bush 2	¶⅓	1978
MONROE COUNTY—		
Bert Robinson, J. W. Miracle 1	1	1196
Newhart & Burkhart, Sophia Laughry 3	¶	2019
Fred Bowman et al, Rachel Wilson 2	1	707
MORGAN COUNTY—		
W. E. Burns et al, Wm. Croston 1	¶¼	858
MUSKINGUM COUNTY—		
Mid-East Gas Co., S. B. Bowman 3	¶	3810
STARK COUNTY—		
East Ohio Gas Co., H. B. McDowell 3	¶¼	4587
SUMMIT COUNTY—		
East Ohio Gas Co., William Ritter 3	¶1	4111
WASHINGTON COUNTY—		
Charles Dennis, Geo. F. Miller 1	6	1714
Lerrick & Burns, Harvey Mosser 2	*	2020
William Depuy, Geo. Helman 1	¶	1935
McVey Oil & Gas Co., John Arnold 1	¶	1565
WAYNE COUNTY—		
Ohio Fuel Gas Co., Susan Immel 1	*	3137
WEST VIRGINIA		
BOONE COUNTY—		
Pure Oil Co., LaFollette, Robson & Prechard 42	4	3113
Owens Illinois Glass Co., Allen & Pryor 20	¶	1860
CABEL COUNTY—		
H. D. Adkins, W. L. & Jennie Adkins 1	¶	3267
Kentucky-West Virginia Gas Co., Andrew Ray 1	¶¼	3560
Larner Gas Co., Fred Carter 1	¶	3471
CALHOUN COUNTY—		
Richter Oil Co., Emily McCray 3	1	1658
Godfrey L. Cabot, Inc., H. Lucretia Harless 1	*	2440
DODDRIDGE COUNTY—		
Columbian Carbon Co., John Bland 1	1	1750
GILMER COUNTY—		
K. F. Ermich & Co., Allen Goff 1	¶	1564
Pittsburg & W. Va. Gas Co., Floe Peters 1	¶	1824
Carnegie Natural Gas Co., Charles Despard 2	¶	2220
L. A. Westfall 5	*	2622
KANAWHA COUNTY—		
Columbian Carbon Co., Susan I. Given	¶¾	5193
Mullins Gas Co., J. F. Corke 1	¶2	4911
LINCOLN COUNTY—		
Martin Gas Co., Black & Yeager 1	¶4⅓	3227
MARSHALL COUNTY—		
Greenfield Oil & Gas Co., Roxie Neely 1	3	2950
WIRT COUNTY—		
Kidder & Goodwin, W. M. Pomroy 1	*	2185

*Failures; †Junked; ¶Million cu. ft. gas.

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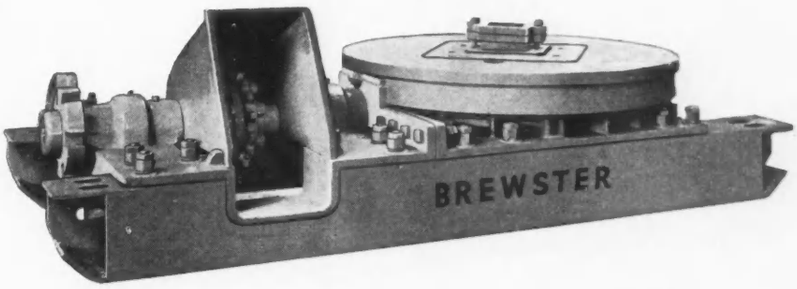
BREWSTER No. 11 ROTARY

An all-steel 25½" rotary of the semi-oil-bath type. Special alloy, Bronzoid, is used in the pinion bearings, and are easily and economically replaced. The design makes possible a low table. Manufacturing facilities make possible a low price. Write for a descriptive booklet, today.



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The streamlined traveling block is available with 4 or 5 sheaves, and the new crown block with 5 or 6 sheaves. All drilling sheaves of manganese steel. The roller bearings are individually Alemite lubricated through the center pin. A card or letter will bring a folder that will give all the specifications and additional features.

REFERENCE:

Practically the entire line of Brewster Oilfield Equipment will be found illustrated and described on pages 295 to 314 of the 1937 Composite Catalog.

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THE OIL WEEKLY REPORT ON IMPORTANT

Wildcat Tests

ALABAMA

CHOCTAW COUNTY—Joe Modisett et al's McCorvey 1, se sw sw 20-9n-2w, completing rur, td 105 ft.

GREENE COUNTY—Willis & Payne's R. L. Lett 2, se nw 6-21n-2e, dk.

HOUSTON COUNTY — Rice O&G Co.'s Oakley Est. 2, nw sw 9-3n-29e, sd 4975 ft.

MOBILE COUNTY — Grand Bayou O&G Co.'s J. A. Stafford 1, sw sw 24-7s-3w, lcn.

ARKANSAS

CLARK COUNTY — McLarry & Carlin's Bierene Lbr. Co. 1, ne se ne 22-10s-21w, rur. J. G. Wooten's Sparkman 1, sw nw 1-11-20, sd 545 ft.

CLAY COUNTY — Nelson et al's Underwood 1, se sw ne 4-20-8, sd 800 ft.

DALLAS COUNTY—Walter Lown's Atkinson 1, nw se 7-10-13, temp. abn 2763 ft.

GRANT COUNTY—Wallace & Staples' W. F. Davis 2, se se nw 23-6-15, drill stem stuck 2380 ft.

HEMPSTEAD COUNTY—Root Pet. Co.'s Drake 1, se nw 23-14-24, elev 311 ft, base massive anhydrite 2905 ft, dr 3360 ft, hd red formation. J. R. Birdwell's Duckett 1, 24-13-24, 10-in csg 100 ft. Sheppard & Todd's Smith 1, ne sw se 1-11-25, sd 600 ft for fuel.

LA FAYETTE COUNTY—King Drlg. Co's Walcott 1, c ne sw 36-19-26, 12½ in csg 488 ft, dr 2375 ft A M Neely's Meek 1, ne nw 35-19-25, sd 3180 ft.

LITTLE RIVER COUNTY—J. G. Strahan's Dierks Lbr. Co. 1, 21-12-28, dr 2050 ft.

MILLER COUNTY — Nivla Oil Corp.'s Merchants & Planters Bank 1, se se 18-15-26, spd. Thad Bryant's Commercial Nat. Bank 1, 20-18-28, lcn. W. M. Layton's Rector 1, se se 17-20-28, lcn. Kimbrough et al's Capps 1, ne sw 11-20-28, mim. (Formerly carried Timbo et al).

NEVADA COUNTY—Benedum & Trees Oil Co.'s Block 1, ne se 9-14-20, elev 287 ft, cored sandy lime, so 4990-5012 ft, dd, td 5035 ft. Mary Jackson 1, nw ne 9-14-20, tested 900 ft oih 2122-32 ft, cemtd csg 2134 ft, td 2138 ft; Mary Jackson 2, ne ne 9-14-20, dk. W. S. King's Wren 1, sw ne 6-13-22, dr 2485 ft. Walter Lown's P. B. Grayson 1, sw se 12-14-20, sd 2200 ft. C. B. & F. Pet. Co.'s Haynie 1, 5-14-20, sd 1170 ft. A. M. Lacey's Bennett 1, sw ne 28-14-22, rur. Axel Larson's J. T. Wortham 1, sw nw 29-13-21, sd 2340 ft. W. E. Stewart's Mendenhall 1, nw ne 1-14-20, 10-in csg 105 ft, dr. G. H. Vaughn's W. R. Mitchell 1, sw se 4-14-20, rur. Christopher 1, sw se 3-14-20, dr 2200 ft.

SEVIER COUNTY—J. C. Brinkley's Dierks Lbr. Co. 1, se ne 14-10-29, spd, sd high water.

UNION COUNTY—Lion O. R. Co.'s Morgan 1, 18-18-17, cored limey shale and sand 5451-66 ft, arr make ds test, td 5466 ft. (Travis Peak). Ark. Southern Oil Co., Inc.'s G. G. Simmons 1, nw nw 15-18-13, rur.

CALIFORNIA

FRESNO COUNTY

CANTUA CREEK—Western Gulf's Southern Pacific Land 3, 3-17-15, td 8531 ft, redr to 8500 ft, bailing water, trace oil.

KERN COUNTY

LERDO—Arkelo Pet. Co.'s Arkelo 1, 23-28-26, dr shale streaks sand showing oil 9531 ft.

ARVIN—Bear Mountain Oil Co.'s Tejon 1, 21-31-30, dr shale 1177 ft. General Pet Corp.'s Arvin 1, 26-31-29, td 7462 ft, swabbed oil and water to 7000 ft, to replug.

SOUTH MARICOPA—E. A. Bender's Robinson 1, 14-10-23, td 1235 ft, plug 550 ft, sd. Trans-Line Pet. Corp.'s No. 1, 3-10-23, sd 662 ft.

PREMIER—Bojaki Oil Co.'s Bowes 1, 28-27-27, dr shale 1700 ft.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*	owdd—*old well drilling deeper.*
‡—*salt water (completions).*	owpb—*old well plugging back.*
†—*junked and abandoned.*	pb—*plugged back or plugging back.*
¶—*million feet of gas.*	r—*reaming.*
abd—*abandoned.*	rog—*rig on ground.*
bbls.—*barrels.*	rur—*rigging up rotary tools.*
br—*building rig.*	rust—*rigging up standard tools.*
b.s.—*basic sediment.*	sd—*shut down.*
csg—*casing.*	sdtr—*sidetracking.*
co—*cleaning out.*	sg—*show gas.*
dd—*drilling deeper.*	si—*shut in.*
dk—*derrick.*	so—*show oil.*
dr—*drilling.*	so&g—*show oil and gas.*
fsg—*fishing.*	spd—*spudding.*
ft—*feet.*	sr—*straight reaming.*
hfw—*hole full water.*	sw—*salt water.*
in—*inches.*	td—*total depth.*
lcn—*location.*	ur—*underreaming.*
m—*milling.*	wih—*water in the hole.*
mim—*moving in materials.*	wo—*workover.*
mit—*moving in tools.*	wocs—*waiting on cement to set.*
mot—*milling on tools.*	wosr—*waiting on standard rig.*
n, s, e, w—*north, south, east, west.*	
oih—*oil in hole.*	

GREENFIELD — British American's Smith 1-A, 21-31-27, sd 1128 ft.

GRAPEVINE—Buffalo Oil Co.'s Tejon 1, 5-10-19, dr shale 4451 ft. Ohio Oil Co.'s Title Ins. D-1, 21-11-19, dr shale 6918 ft. Reserve Oil & Gas Co.'s Ritchie 33-1, 33-11-19, td 6030 ft, plug 4990 ft, sd; Tejon 33-3, using to inject into 33-2, a new completion.

SAN EMIDIO—I. L. Burch's No. 1, 3-10-23, td 2590 ft, rep equip. Union's No. C-1, 34-11-22, dr shale 4400 ft.

WASCO—Continental Oil Co.'s K. C. L. A-1, 8-27-24, td 9545 ft, fsh. Seaboard Oil Corp.'s K. C. L. C-1, 26-27-24, dr shale 3460 ft.

ROSEDALE—Continental Oil Co.'s K. C. L. B-1, 12-29-26, dr shale 4976 ft. Lube Oil Co.'s No. 1, 2-25-18, dr sandy shale 4286 ft.

DEVIL'S DEN—Den Pet. Co.'s Bates 1, 20-25-19, td 3280 ft, oil show on ditch, co.

JASMINE—Doyle Pet. Corp.'s Quinn 1, 15-25-27, td 2956 ft, plug 2882 ft, bailing; Quinn 2, dr shale 935 ft.

EDISON—East Edison Oil Co.'s No. 2, 22-30-30, dr shale 770 ft.

NORTH KERN RIVER—Hut Oil Co.'s No. 1, 8-28-28, lcn.

RIO BRAVO—Mohawk Pet. Co.'s K. C. L. 1, 23-29-25, dr shale 4221 ft. Petroleum Securities Co.'s Wright 1, 23-29-25, sd 50 ft. Tide Water Associated's K. C. L. 1, 30-29-25, dr gray shale 8774 ft.

KERN FRONT—Seskayden Oil Co.'s No. 3-A, 17-28-27, td 2890 ft, plug 2870 ft, bailing; Sesnon 4-A, 17-28-27, 2908 ft, to test on pump.

TEN SECTION—Shell's Canal 21-14, 14-30-25, rur. Superior Oil Co.'s K. C. L. 8, 11-30-26, td 10,409 ft, wocs 7-in at 10,380 ft.

GOSFORD—Signal Oil & Gas Co.'s K. C. L. 1-A, 21-30-27, dr shale and sand, 6950 ft, oil show 6460 ft.

McGUNDY—Superior Oil Co.'s Crome Com. 1, 36-29-28, rig.

BAKERSFIELD—Wilshire Oil Co.'s Farming & Produce 1, 36-30-37, lcn.

MISCELLANEOUS

HUMBOLDT COUNTY—Texas Co.'s Eureka 1, 22-3-1, td 7418 ft, r at 6580 ft.

KINGS COUNTY—Central Calif. Utilities Corp.'s Lakeview 3, 11-23-19, td 1190 ft, to test for gas. A. S. Clare's Laymance 1, 20-20-22, rur. Dudley Ridge Dev. Co.'s No. 2, 24-23-20, foundation. Pyramid Prod. Co.'s Spreckles 2, 16-24-18, lcn. Kettleman View Oil & Gas Co.'s No. 1, 9-22-19, td 4787 ft, wocs 6⅝-in at 3400 ft. T. G. Norell's Kuess 1, 7-21-21, td 6179 ft (formerly Monocline Dev. Co., later E. B. Guess), to deepen. Glen C. Stone's Teeter 1, 25-20-20, dr sandy shale 1578 ft. Tide Water Associated's Avenal 2, 35-23-17, dr wet oil sand 2230 ft.

SAN BENITO COUNTY—Tide Water Associated's Murphy Ranch 1, 5-12-4, td 6387 ft, set 8⅝-in at 6382 ft, ran formation tester, to dr ahead.

SAN JOAQUIN COUNTY—Coast Explor. Co.'s T. F. 1, 2-3-4, rur.

SOLANO COUNTY—Amerada Pet. Corp.'s Drouin 2, 25-4-2, rur; Maywood 1, 35-4-2, td 4533 ft, tested good for 33,000,000 ft gas, wocs 7-in at 4350 ft.

SUTTER COUNTY—Buttes Oilfields' No. 4, 2-15-1, td 5200 ft, to complete at this depth, blew out in January outside of casing, used weight material, good for 10,000,000 to 15,000,000 ft gas, now plan to drill deeper, No. 3 for oil, or start No. 5.

TULARE COUNTY—J. W. Alford's Williams 1, 28-16-23, sd 1023 ft. R. R. Ellis' Ellis 1, 20-24-23, rig. E. P. Jennings' No. 1, 4-24-23, td 2709 ft, plug 2690 ft, to replug; No. 2, rig.

MONTEREY COUNTY—Amil A. Anderson's No. 1, 15-24-14, dr shale 450 ft. Shell's Branch 2, 34-24-10, dr shale 7030 ft. Texas Co.'s Dunphy 1, 30-19-7, dr shale 3250 ft.

SAN LUIS OBISPO COUNTY—Aviation Oil Co.'s Britnall 1, 10-11-35, sd 1639 ft. Barnsdall's K. C. L. A-1, 1-32-20, dr shale, streaks sand, 1716 ft. R. A. Foster's McKee 1, 2-32-23, sd 5087 ft. Gretna Corp.'s No. 1, 25-30-10, material on location. A. T. Jergins Trust's Indian Knob 1, 26-31-12, td 1438 ft, wocs 8⅝-in at 1436 ft. Tembler Oil Co.'s No. 1, 22-32-21, rur. Union's Porter 1, 22-32-15, td 5010 ft, plugged and then abn. United Foreign Oil Co.'s Panorama 2, 2-32-21, sd 2435 ft.

SOUTHERN CALIFORNIA

NEWHALL—Barnsdall's Rancho S. F. 1, 26-4-17, coring oil sand 6472 ft. Holbrook Pet. Co.'s Newhall Land 1, 28-4-16, dr hard brown shale 4502 ft.

PICO CANYON—A. G. Burt's No. 1, 36-4-17, dr shale 520 ft.

LYNWOOD—Calizoo Oil Co.'s Saulque 1, 9-3-13, sd 3995 ft.

NORTH LONG BEACH—Geo. L. Clayton's Clayton 1, 32-3-12, dr sand and shale 3320 ft.

FOX HILLS—Country Club Oil Co.'s No. 1, dr sand streaks shale 2754 ft.

EAST WHITTIER—Drillers Inc.'s No. 1, 22-2-11, td 1640 ft, plug 846 ft, testing water shutoff.

MONTEBELLO—Danciger Oil & Ref. Co.'s Baldwin 1, 11-2-11, lcn, to drop from report.

CLEARWATER—H. Heide's Rogers 1, 20-3-12, rig, partly rigged up.

DAVIDSON CITY—Hilldon Oil Co.'s Flood Control 1, 11-4-13, td 5672 ft, ran 4½-in perforated, landed on bottom, swabbing.

WEST COYOTE—Hogan Pet. Co.'s McNally 1, 23-3-11, rur.

PUENTE—Honolulu Oil Corp.'s Butler 1, 15-2-10, dr dark blue shale 3512 ft.

WALNUT—Julian & Criswell's Langstaff 1, 5-2-9, dr shale, streaks hard sand 1294 ft.

HERMOSA BEACH—Leora Oil Co.'s No. 1, 31-3-14, dr hard sandy shale 4790 ft.

PALOS VERDES—McClaren Bros.' No. 1, 27-4-14, td 3990 ft, redr at 1880 ft.

ANAHEIM DISTRICT—Shell's Mathis 1, 23-4-10, td 4312 ft, cored 5 ft oil sand 4240-4245 ft, dr.

ROSECRANS—Shell's McKinley 4-1, 20-3-13, td 7744 ft, set 8⅝-in at 7458 ft, was wet, pumped in more cement, standing.

HAWTHORNE—Signal Finance Co.'s Woods 1, 10-3-14, td 9395 ft, plugging and swabbing to locate water.

CULVER CITY—Vincent Pet. Co.'s Harriett 1, 12-2-15, sd, to drop from report.

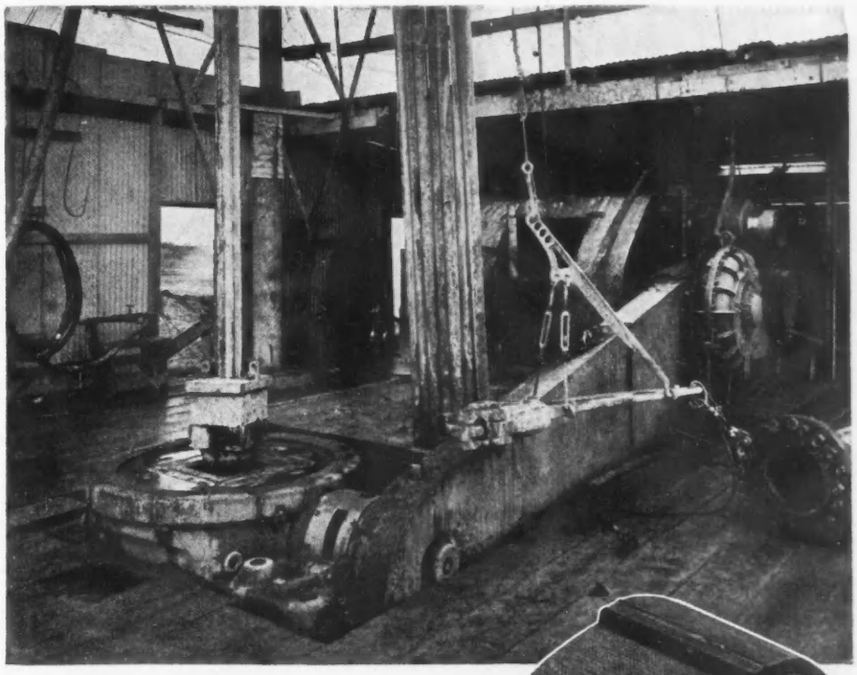
ORANGE COUNTY—Mesa Oil Co.'s Mesa 1, 29-6-10, td 6051 ft, standing cemented with sleeve liner at 2800 ft. Shell's Core Hole A, 23-3-9, rur.

KANSAS

BARTON COUNTY—Duee & Brouk's Baker 1, ne se sw 16-17s-13w, td 3500 t, D & A. I. T. I. O. Co.'s Schrepel 1, se se ne 26-20s-11w, sso 3110-15; co 3190 ft. Herndon Drlg. Co. & Morgan & Flynn's Robenseifer 1, cnw 7-18s-15w, sd 430 ft. Stanolind's Burmeister 1, ne ne sw 33-19s-11w, cor 3355 ft. C. L. Price et al's Kraft 1, sw nw ne 10-17s-11w, dr 2315 ft. C. L. Carlock's Leibel 1, se ne se 18-18s-11w, ur 12 in csg 685 ft. Missouri Valley O & G Co.'s Peach 1, se se se 24-16s-14w, dr 1950 ft. Ralph Wixon & Union O & R Co.'s Frederick 1, nw nw nw 12-16s-13w, ru. John Burton et al's Wendel 1, ne ne ne 13-19s-11w, dr 3374 ft. S. A. Murphy's Beck 1, ne ne ne 17-17s-12w, lcn. Geo. Dickey et al's Boger 1, se se ne 15-16s-13w, Cel.

BUTLER COUNTY—A. M. Landon et al's

Judge BX LINING for yourself



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HERE ARE THE FACTS!

Typical BX Performance!

Installation on a Union Tool 7½ RB Unit at Hastings, Texas. Not equipped with Hydromatic.

Completing 1st well...	3,000 feet
2nd well.....	5,800 feet
3rd well.....	5,300 feet
4th well.....	6,100 feet
5th well.....	5,700 feet
6th well, still drilling..	5,800 feet
Total Anticipated	**31,700** feet

Installation on an Oilwell 7P Unit at Corpus Christi, Texas. Not equipped with Hydromatic.

2 wells, 4,300 each..	8,600 feet
2 wells, 5,600 each..	11,200 feet
2 wells, 5,800 each..	11,600 feet
Still running; good for 5,700 feet.....	5,700 feet
Total Anticipated	**37,100** feet

Installation on Gumbo Buster Unit at Corpus Christi, Texas—Pressure water cooled drums.

3 wells, 4,300 each...	12,900 feet
1 well.....	6,100 feet
2 wells, 3,900 each ..	7,800 feet
1 well.....	5,900 feet
Still running; good for 2 more, 5,000 each.	10,000 feet
Total Anticipated	**42,700** feet

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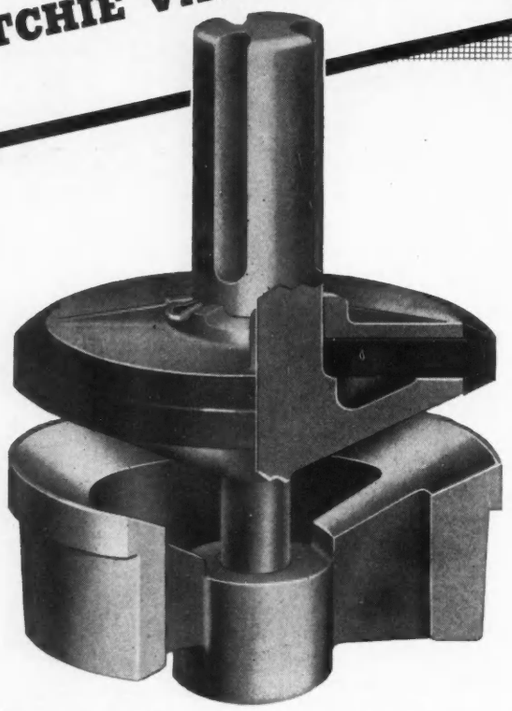

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COMPTON, CALIFORNIA HOUSTON, TEXAS
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McCaig 1, ne ne se 13-28s-6e, dr 1865 ft. C. L. Seibel et al's Bisagno 1, se se nw 24-25s-6e, ru mach. Vickers Pet. Co.'s Voth 1, cnl s½ sw ne 32-24s-4e, mim. Rex & Morris' Gilmore 7, se se ne 13-25s-6e, mim.

CHASE COUNTY—Hanna et al's Brothers 1, se se nw 25-20s-8w, ur 8 in csg 2815 ft.

CHAUTAUQUA COUNTY—W. M. McKnab's Griffith 1, sw sw sw 11-32s-10e, ru mach. E. I. Shaffer's Nuckalls 1, nw nw nw 12-33s-9e, dr 460 ft.

COWLEY COUNTY—W. M. McKnab's Weldschmidt 1, sw sw nw 18-34s-6e, ur 8 in csg 2478 ft. McKnab's Community 1, cne nw 14-34s-3e, ur 5 in csg 3431 ft. Wentz & Amerada's Rush 1, nw sw sw 36-34s-6e, dr 1530 ft. Tom Palmer's Lowe 1-A, sw se se 3-32s-5e, dr 75 ft. Ryan Consolidated's Couch 1, sw sw se 13-30s-5e, ru mach. Elmer Ash et al's Bolack 1, nw nw se 22-32s-6e, Cel.

DECATUR COUNTY—Winkler & Koch's Vessey 1, cnw se 26-3s-26w, sd 4007 ft. C. L. Bruce et al's Newbald 1, cne sw 34-2s-28w, lcn.

ELLIS COUNTY—Empire's Samuelson 1, ne ne ne 31-11s-16w, woc. Murphy Oil Co.'s Weisner 1, se se sw 12-14s-19w, set 8 in csg 3185 ft, co. Lario O & G Co.'s Cress 1, ne ne ne 13-11s-17w, set 7-in csg 3297 ft, rust. Empire Hall 1, se se se 2-12s-17w, dr 3360 ft. Sunray Oil Co.'s Befort 1, ne ne ne 11-14s-20w, ru 6 in csg 3550 ft. Mazda Oil Co.'s Henderson 1, sw sw ne 27-11s-18w, ru. Noble Pet. Corp.'s O'Laughlin 1, nw nw se 13-12s-19w, set 15 in csg 644 ft, dr 750 ft. Earl Wakefield's Putman Mort Co. 1, se se nw 32-15s-17w, ru. Ted Kors et al's Koblitz 1, se sw nw 23-12s-18w, pb 3697½ ft, shot and acid, testing.

ELLSWORTH COUNTY — Frost et al's Dolechek 1, ne ne sw 36-14s-8w, dr 660 ft.

FINNEY COUNTY—Keith & Olson Drlg. Co.'s Ely 1, nw nw sw 34-22s-29w, dr 3553 ft.

GRANT COUNTY—Columbian Fuel Co.'s Gray 1, cse 3-29s-35w, dr 2633 ft.

GREENWOOD COUNTY—Ohio Oil Co.'s Schwab 1, se sw se 9-24s-10e, 2000 ft oih, 48 hrs; B 2½ bls oil per hour. Hollis et al's Boone 1, ne ne nw 21-26s-12e, td 1130 ft, D & A.

HARPER COUNTY—Carter Oil Co. et al's Seihart Estate 1, csw nw 4-34s-8w, set 15 in csg 293 ft.

HARVEY COUNTY—Harburney Oil Co.'s Schragg 1, nw nw se 24-22s-3w, fsg 3711 ft.

HASKELL COUNTY—Kuhn Bros. et al's Meredith 1, csw ¼ 10-30s-33w, hole bridged, co.

KEARNEY COUNTY—J. L. Murphy's Masonic Home 1, cnw¼ 1-26s-36w, mi rot tools.

KINGMAN COUNTY — Shell Pet. Corp's McMichael 1, cw½ w½ sw 12-27s-10w, td 4535 ft, D & A.

LOGAN COUNTY—Rosespring Drlg. Co. et al's Wright 1, cse se 12-15s-35w, woc 2815 ft.

LYON COUNTY—Clyde Fred et al's Bruce 1, nw nw nw 13-18s-10e, woc.

McPHERSON COUNTY—Hutchinson O & G Co. et al's Berg 1, sw sw se 15-20s-3w, dr 1920 ft. Wamhoff et al's Nuse 1, se se sw 18-18s-4w, surf hole. Bradley Bros.'s Barnholt 1, sw sw se 30-20s-5w, spd. Fred C. Frank et al's Doles 1, se nw ne 12-19s-1w, spd.

NESS COUNTY—Newton Dev. Co.'s Tenny 1, nw nw se 19-18s-25w, ur 8 in csg 3875 ft. Jones & Lane's Page Milling Co. 1, se se nw 36-18s-26w, mim.

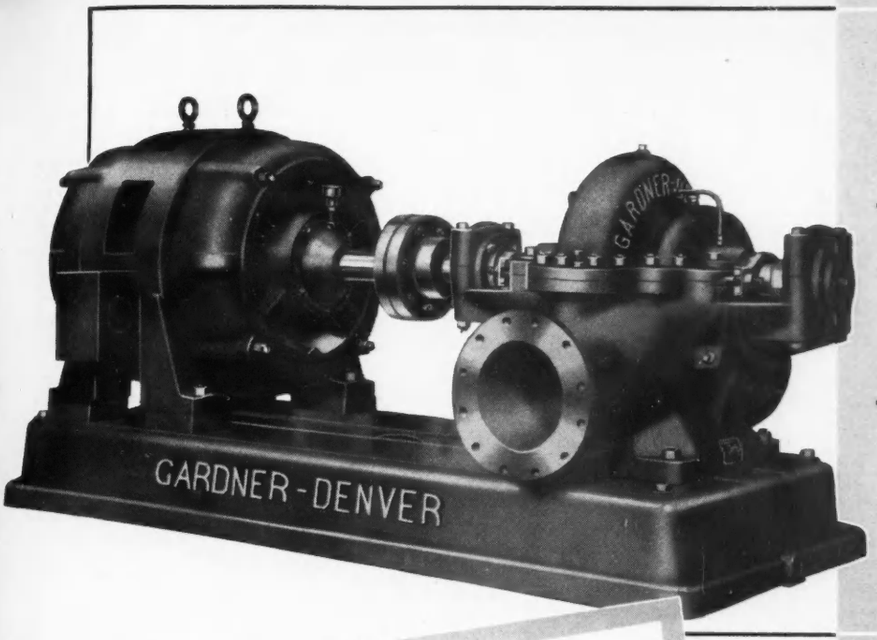
RENO COUNTY—Clyde Pulse et al's Payne 1, sw nw ne 4-22s-7w, hfw 3440 ft, pb 3416 ft, woc. Foraker et al's Hiett 1, se sw ne 34-24s-4w, sd 3930 ft. Helmerich & Payne's Benson 1, ne ne ne 5-25s-6w, cor. Atlantic's Page 1, se nw nw 19-23s-7w, dr 3664 ft. Olson Drlg. Co. et al's Herriman 1, nw nw nw 22-24s-8w, rot rig. Imo O & G Co. et al's Watkins 1, se se se 14-22s-7w, mim. Westgate-Greenland Oil Co.'s O'Sullivan 1, sw sw ne 24-23s-5w, dr 500 ft.

RICE COUNTY—Empire's Banterton 1, se sw se 11-18s-8w, pot. P. 268 bbls oil, 24 hrs, comp. Continental et al's Michells 1, ne ne sw 12-18s-2w, set 7 in csg 3202 ft, rust. T. C. Johnson's Schubert 1, sw sw sw 9-20s-10w, ur 10 in csg 1930 ft. L. C. Douglas' Coyne 1, ne se se 24-21s-8w, sd 1505 ft. John Hanna et al's Fulton 1, nw nw ne 24-19s-6w, dr 780 ft. Manning, Martin et al's Mathes 1, se sw ne 27-21s-8w, dr 2325 ft. Roy Ramsey et al's Malone 1, nw nw ne 1-20s-10w, dr 1870 ft. C. F. Skiles et al's Helmer 1, nw nw ne 7-19s-8w, cel. Skelly Oil Co. & Ewers Simpson Oil Co.'s Linville 1, sw nw ne 2-20s-10w, mim. Fred Phillips et al's Hubenett 1, sw ne sw 23-20s-6w, ru. Bradley Oil et al's Ginter Heirs 1, nw nw nw 13-20s-8w, lcn. W. E. Witt et al's Fair 1, ne se se 4-22s-8w, ru.

ROOKS COUNTY—Snowden & McSweeney's Hindman 1, ce½ nw 35-7s-17w, testing. Graham et al's Fike 1, sw sw sw 9-9s-17w, td 3301 ft. Lester & Dean's Burtt 1, se se ne 29-10s-20w, fsg 3422 ft. Phillips Pet. Co.'s Manquist 1, sw sw nw 9-9s-17w, ru. Jones Bros. Drlg. Co.'s Wiss 1, nw nw nw 8-10s-8w, dr 50 ft.

RUSH COUNTY—S. A. Murphy et al's Roth 1, nw nw sw 21-16s-18w, set 15-in csg 445 ft.

RUSSELL COUNTY—Empire's Vaughn 1,



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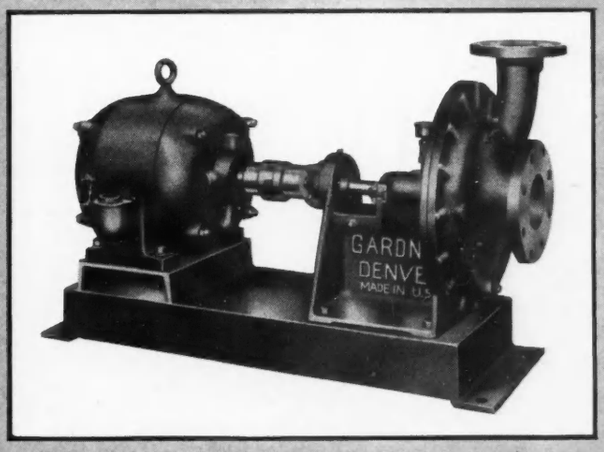

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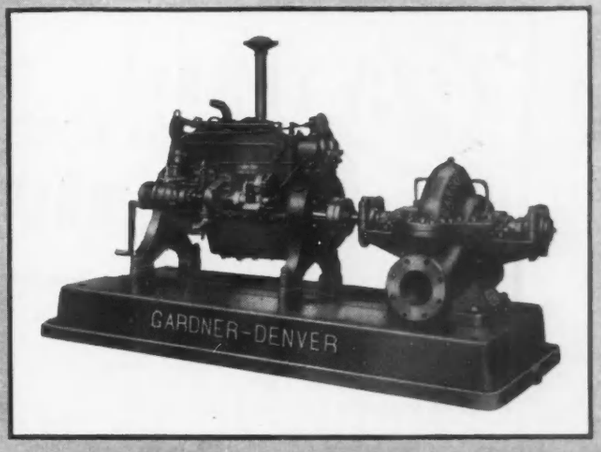

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sw sw sw 17-14s-14w, testing. S. A. Murphy et al's Deines 1, se se sw 36-15s-15w, lcn. Goldstein & Vernon O&G Co.'s Steinert Estate 1, ne se sw 34-15s-15w, mim.

SEDGWICK COUNTY—Cameron et al's Smith 1, sw se se 13-27s-2e, dr 2614 ft. Swearer et al's Thome 1, sw sw nw 19-28s-1w, dr 842 ft. Roxanna Drlg. Co. et al's Woodman 1, sw nw sw 26-26s-1w, set 12-in csg 74 ft. Empire O&R Co.'s Kimel 1, nw nw nw 4-29s-2w, mim (rot). E. B. Shawver's Furman 1, sw ne se 24-29s-3w, mim. The Texas Co.'s Harper 1, ne sw se 9-30s-3w, rot rig.

STAFFORD COUNTY—Empire's Jordan 1, sw sw nw 15-25s-14w, cor. Empire's O'Conner 1, ne ne ne 17-24s-15w, dr cem. Young et al's Murphy 1-A, se nw ne 32-21s-11w, fsg 1380 ft. Trigg & Vernon O&G Co.'s Andrea 1, se se se 4-23s-12w, set 12-in csg 190 ft. Rosespring Drlg. Co.'s Gray 1, nw nw nw 11-24s-13w, mi rig.

SUMNER COUNTY—Wakefield & Mead Oil Co.'s Napp 1, sw sw nw 2-34s-5e, td 3217 ft, D & A. Westfall et al's Rogers 1, sw ne sw 35-31s-1w, dr 4015 ft. Graham et al's Dawson 1, nw nw nw 4-33s-2w, dr 3837 ft. E. B. Shawver et al's Bryan 1, cw½ w½ sw 36-30s-2w, rur.

TREGO COUNTY — Central Commercial's Burkett 1, csw 15-11s-22w, td 4239 ft, D & A. Black Gold Oil Co.'s Allman 1, csw sw 34-14s-21w, dr 3287 ft.

WOODSON COUNTY—Reamer's Corn 1, ne ne ne 31-36s-15e, dr 1820 ft. C. L. Sheedy's Fuhlhage 1, cs½ nw se 27-25s-14e, dr 1435 ft. Harper et al's Weidie 1, se se ne 10-24s-14e, dr 1850 ft.

NORTH LOUISIANA

BIENVILLE PARISH—Lide, Greer et al's J. D. Smelley 1, sw ne 13-16n-5w, elev 239 ft, base massive anhydrite 5640 ft, tested est 50 mli ft gas and spray distillate 7163-93 ft, tested est. 30 mil ft gas 7205-40 ft, set 7-in csg 7378 ft, perf csg 7202-18 ft, completed est. 25 mil ft gas and heavy spray dist, td 7693 ft; W. J. Smelley 1, se nw sw 18-16n-5w. McDowell et al's Locke 1, 9-15n-10w, dr 2410 ft. De-Soto O&G Co.'s Wm. Ashley 1, sw se 15-16n-10w, mim. Texas-Seaboard Oil Co.'s McGee 1, 3-16n-6w, 7-in csg 7537 ft, tested gas after perforating csg at 7323-33 ft at 7345-55 ft and 7448-62 ft, perf csg and tested est 2½ mil ft gas at 6665-95 ft in basal Glen Rose, td 8017 ft. W. J. Hunter's Stoer 1, nw se 10-15n-15w, mim.

BOSSIER PARISH—Ark. La. Gas Co.'s Wilson 1, sw se sw 8-17n-11w, dr 2245 ft. Hardeman 1, 6-17n-11w. woc 7-in csg 4324 ft. Haynes Drlg. Co.'s A. J. Murff 1, 35-17n-12w, dr 4595 ft. La. Pet. Corp.'s Edwards 1, 5-17n-11w, si for gauge, td 5184 ft. Producers O&G Co.'s Richard Johnson 1, 5-17n-11w, lcn. Triangle Dr. Co.'s Skannal I-1, 22-17n-12w, si for gauge 5170 ft. H. L. Skannal H-1, sw sw 23-17n-12w, testing so oil, td 5166 ft. United's Skannal H-1, 26-17n-12w, top Petitt 5120 ft, flowed 5 bbls oil per hour through ⅛ in choke, tub press 200 pounds, cas press 900 pounds, si for tankage, td 5144 ft; Skannal I-1, sw sw 25-17n-12w, spd, woc surf csg; Freedman 1, 15-17n-12w, pb to 4380 ft, completed as gasser, si for gauge, old td 5130 ft; Henderson 1, 36-17-12w, dr 4804 ft; Webb Unit 1, c 23-17n-12w, spd woc surf csg.

CADDO PARISH—Fallon Oil Co.'s Cupples 1, 24-16n-13w, 10⅝ in csg 2000 ft, dr 4422 ft. Ferguson et al's Huckabay 1, 22-22n-16w, 8-in csg 1130 ft, tested dry 1137 ft, arr deepen. Gulf's E. P. Hatcher 1, 11-17n-15w, elev 269 ft, 7-in csg 8307 ft, coring 9051 ft. R. W. Norton's Payne 1, se se 27-23n-16w, coring 8634 ft.

CLAIBORNE PARISH—Lisbon Oil Co.'s J. W. Burgess 1, se ne 3-20n-5w, elev 354 ft, base massive anhydrite 4212 ft, dr 5130 ft lime. Lyons & Neely's Patton 1, nw sw 36-21n-5w, dr 4835 ft lime. Oden & Evans' Patton 1, se se 36-21n-5w, elev 355 ft, top first anhydrite 3812 ft, massive anhydrite 4030-4232 ft, coring 5340 ft, fossiliferous lime. Red Iron Drlg. Co.'s H. F. Patton 1, sw ne 36-21n-5w, 10-in csg 850 ft, dr 5080 ft shale; H. F. Patton 2, 36-21n-5w, lcn; T. E. Patton 1, 36-21n-5w, lcn; McDonalld 1, 36-21n-5w, lcn. Standard of La.'s R. D. Baker 1, nw nw 27-19n-7w, 13-in csg 285 ft, top red beds 3760 ft, dr 4340 ft red beds. United's Warren Brown 1, se ne 1-19n-6w, woc 5⅛ in csg 5719 ft, td 5984 ft. Rufus Simms 1, sw nw 32-20n-5w, si for gauge, td 5714 ft.

CATAHOULA PARISH — Balconies Oil Co.'s T. J. Chisum 1, 19-10n-8e, rur. Matheny & Schumacher's W. S. Peck 1, 40-10n-8e, mim.

DE SOTO PARISH—Sundby et al's Garland 1, se nw 7-14n-14w, top anhydrite stringer 4228 ft, dr 4670 ft hd lime. Benedum & Trees Oil Co.'s Clifton 1, ne nw 33-13n-12w, 12¾ in csg 1010 ft, dr 3220 ft. Julian-Igoe Synd.'s H. Smith 1, se se 31-14n-15w, lcn. Sanders et al's Allison 1, 17-14n-13w, mim. Chamberlin et al's Lanier 1, 29-11n-11w, dk. Grady Vaughn et al's Sample 1, ne se 24-11n-14w, owdd 5955 ft. Pearl Oil Corp.'s Joyner 1, 28-11n-12w, cored sand, so 2887-90 ft, 8¼ in csg 2885 ft, bailed dry at 2999 ft, dr 3100 ft. Lee Oil Corp.'s Mansfield Pet. Co. 1, se se 13-10n-14w, dk.

RAPIDES PARISH—R. D. Webb's Brasher 1, 22-4n-2w, coring 3185 ft.

RICHLAND PARISH—Gulf's R. R. Rhymes 15, se se 32-17n-6e, elev 87 ft, dr 9815 ft, hd lime.

WEBSTER PARISH—Ohio Oil Co.'s S. T. D. Coyle 1, se sw 23-21n-10w, ran electrical tester, set csg, dr plug,s td 5570 ft. Ohio's R. M. Coyle 2, se se 22-21n-10w, dr 3846 ft. Ohio's S. P. D. Coyle & W. Cox 1, sw se 23-21n-10w, lcn. A. H. Gray 1, Acct. 2, nw nw 26-21n-10w, dr 5570 ft. Ohio's R. L. Holloway B-7, sw ne 23-21n-10w, lcn; Hodges 2, nw sw 23-21n-10w, dr 6000 ft. Magnolia Pet. Co.'s Cox 2, se ne 22-21n-10w, lcn. United's C. V. Davis 2, 23-21n-10w, 5-in csg 8520 ft, gauged 26 bbls dist and 308,000 cu ft gas per hour, td 8554 ft. United's Mixon 1, 22-21n-10w, cemtd 5-in csg 8211 ft, td 8231 ft. Woodley Pet. Co.'s Gray B-4, ne ne 27-21n-10w, dr 5697 ft. Standard of La.'s Fudicker 1, 2-17n-9w, top Travis Peak 6881 ft, set csg on bottom at 7002 ft, tested sw when perf 4615-31 ft, fsg out cement retainers at 5550 ft, td 7002 ft. Bass Drlg. Co. et al's Thos. Chrichton, Jr. 1, nw nw 21-20n-9w, mir.

WINN PARISH—C. W. Cline's Collinsworth Hrs. 1, se se 14-10n-4w, dk and mir.

SOUTH LOUISIANA

ACADIA PARISH—H. E. Dalton's Setting 1, Trilby prospect, 17-9s-1w, dr shale 4606 ft. Humble's Nordyke 1, Ebenezer prospect, 23-10s-1e, dr shale 9139 ft.

CALCASIEU PARISH—D. & D Oil Co.'s Lutcher Moore 1, nw of Starks, 1-8s-13w, tried to blow out at 8398 ft, fsh

CAMERON PARISH—Magnolia's Dobbertine 1, Johnson Bayou prospect, 9-15s-14w, lcn. Pure's State Mallard Bay 1, Mallard Bay prospect, 22-13s-3w, woc 5925 ft. Union Sulphur's Hebert 1, Big Lake area, 18-12s-8w, woc 6484 ft.

EAST FELICIANA PARISH—Barnett Pet. Corp.'s Tullos 1, near Jackson, 34-2s-1w, dr shale 6324 ft.

EVANGELINE PARISH—Bel Cheney Springs Oil Co.'s Fee 1, 10-2s-1w, sd 1723 ft. Continental & Humble's Pardee Lbr. Co. 1, Reddell area, 18-4s-1w, dr shale 5113 ft.

IBERIA PARISH—Jefferson Lake Oil Co.'s Lake Peigneur 414, Lake Peigneur prospect, 12s-5e, to perforate 6940 ft.

JEFFERSON PARISH—Triangle Oil Co.'s Carroll 1, 125-12s-11e, repairing dk, 2461 ft.

JEFFERSON DAVIS PARISH — Amerada Stanolind's Calcasieu National Bank 1, China prospect, 28-7s-3w, fsh 9139 ft. Shell's Sturdevant 1, South Roanoke prospect, 25-10s-4w, reaming 9053 ft. Stanolind's United Life Insurance 1, Hayes prospect, 16-11s-5w, dr shale 4725 ft.

LAFOURCHE PARISH—Fohs Oil Co.'s State Long Lake 1, in Long Lake, 65-17s-19e, dr shale 3310 ft. William Helis' City of New Orleans 1, Marchland prospect, 19-23s-23e, dr shale 3860 ft.

PLAQUEMINES PARISH—Tide Water Associated Oil Co.'s Manhatten Fruit 2, Venice dome, 26-21s-30e, fsh 7252 ft.

ST. BERNARD PARISH—Gulf's Lake Lery 1, Lake Lery prospect, 28-14s-14e, dr shale 5403 ft. Southern Sulphur Co.'s State 2, Lake Borgne area, 38-14s-15e, dr shale 2502 ft.

ST. LANDRY PARISH—Shell's Boagni 1, ne of Cankton, 48-8s-4e, dr shale 2525 ft.

ST. MARTIN PARISH—Stanolind's Numa Patin 1, Anse La Butte, 46-9s-5e, woc 1770 ft. Texas Co.'s State Mongouloi 3, Lake Mongouloi prospect, 14-10s-9e, dr shale 2443 ft; St. Martin Land Co. 9, Henderson prospect, 21-8s-7e, coring sand 8605 ft.

ST. MARY PARISH—Texas Co.'s State Bateman Bay 1, Morgan City prospect, 21-16s-12e, dr shale 1746 ft; State Wax Lake, Wax Lake prospect, 40-17s-9e, setting 7⅝-in csg 10,975 ft.

TERREBONNE PARISH—Humble's Elender 1, Houma Gas field, 23-19s-19e, dr shale 10,502 ft.

VERMILION PARISH—Continental's Hebert 1, Abbeville prospect, 20-12s-3e, making gas and distillate 7675 ft.

MICHIGAN

ARENAC COUNTY — Mee & Wright's Yawkey 1, 28-18n-4e, dr 990 ft. Petroleum Corp.'s LaFave 1, 17-18n-5e, dr 1345 ft.

GLADWIN COUNTY—Bell & Mark's Keyes 1, nw sw nw 9-17n-1e, rig. McClanahan Oil Co.'s Avery 1, 10-17n-1e, dr 2700 ft. Cryden Petroleum Co.'s Gary 1, 34-19n-1w, lost hole 170 ft, skidding rig. Gordon Oil Co.'s McClure 1, ne nw ne 25-19n-2w, dr 110 ft.

GRATIOT COUNTY—Charles Anderson's Askergrad 1, 9-9n-1w, sd 521 ft. C. E. Bliss' Palmeter 1, 18-9n-1w, rig. Sam Siegel's Kerr 1, 36-10n-1w, sd 2200 ft. H. B. Cowdrey's De-Vuyst 1, 11-10n-2w, rig.

ISABELLA COUNTY—Burnstein Oil Co.'s Sherman 1, 1-16n-5w, sd 80 ft, may abandon. Gulf's Koch 1, nw ne nw 1-13n-4w, rig. Socony Vacuum's Murphy 1, 6-16n-3w, rig.

MONTCALM COUNTY—Charles Weller's Herzog 1, 14-12n-8w, dr 2000 ft. R. E. Gallagher's Hayden 1, 25-11n-7w, sd 3360 ft.

OTSEGO COUNTY—Harley William's Raae 1, 15-30n-1w, sd 2280 ft. Barton & William's Yuill 1, se se ne 9-32n-3w, lcn.

WASTHENAW COUNTY — Lee Brown's Kehrl 1, 12-1s-7e, dr 3860 ft. Ypsilanti Co.'s Vorhees 1, 32-2s-7e, dr 1600 ft.

WAYNE COUNTY—Darke Bros.' Trusdell 1, 25-2s-8e, dr 1700 ft. Wolverine Driller's Gardulski 1, 19-2s-9e, dr 1300 ft. Huron River Valley Co.'s Scheffler 1, 26-3s-8e, dr 1200 ft.

MISCELLANEOUS COUNTIES: Cass—L. T. Barber's Beebe 1, 3-5s-15w, lcn. Clare—Wittmer Oil Co.'s Musgrove Sales 1, 3-18n-5w, dr 2600 ft. Hillsdale—Hughes Heinig's Daley 1, 10-7s-4w, dr 1850 ft. Ionia—Boston O&G Co.'s Marshall 1, 16-6n-8w, dr 800 ft. Iosco—Pabst Pet. Co.'s Monfort 1, se se ne

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Figure 158

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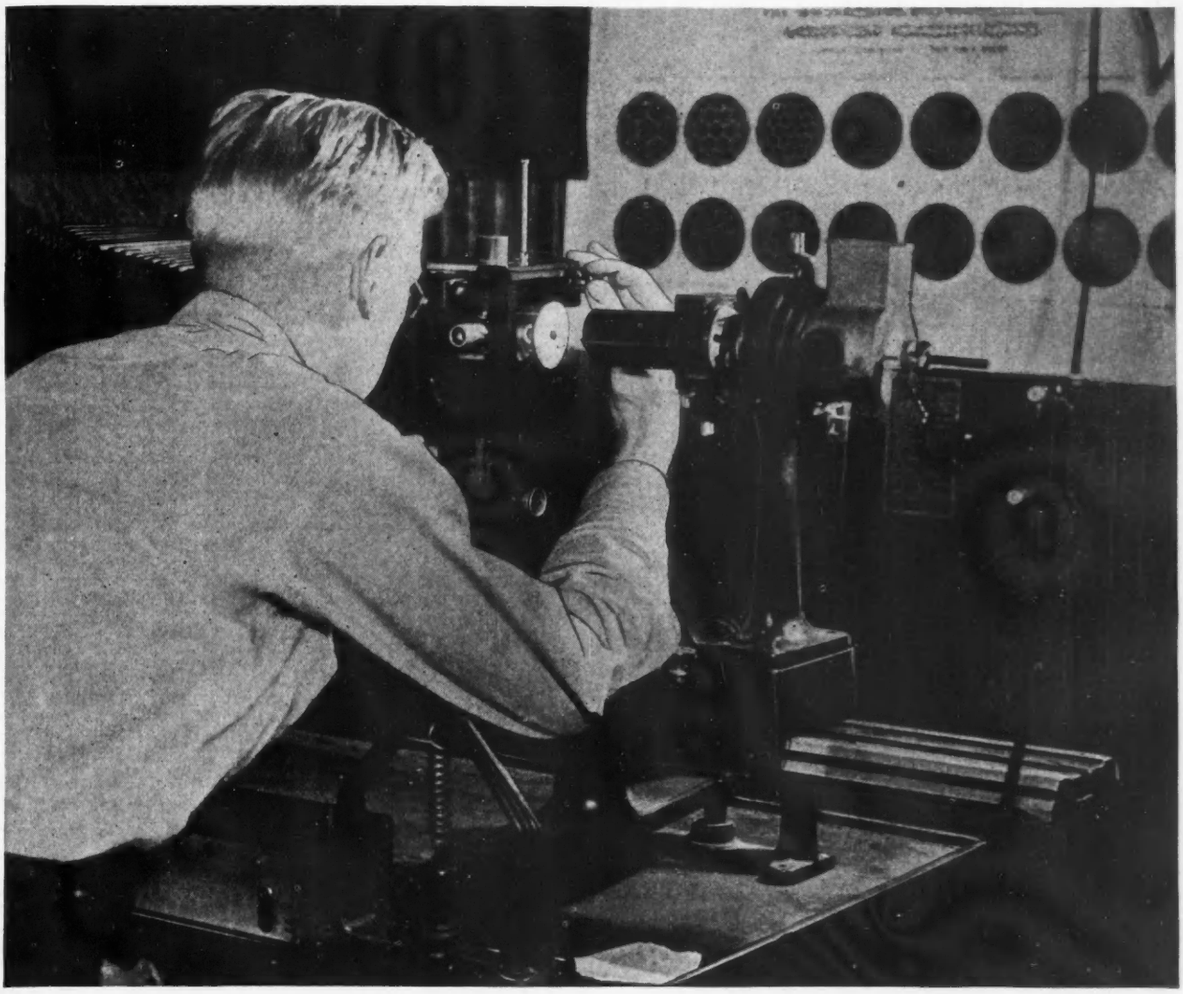

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8-22n-6e, lcn. Jackson—Morris O&G Co.'s Peters 1, 25-2s-2e, lcn. Missaukee—Rex Oil Co.'s Meekoff 1, 30-21n-6w, lost hole 800 ft, skidding. Osceola—Dibble Brother's Townsend 1, 5-20n-7w, dr 3880 ft.

MISSISSIPPI

AMITE COUNTY — J. P. Wemple, Tr.'s Southern Forest Land Co. 1, sw sw 29-4n-2e, 10-in csg 850 ft, dr 2643 ft, sand and shale.

GRENADA COUNTY—H. T. Salter et al's Carpenter 1, nw se 5-21n-7e, rebld dk.

HARRISON COUNTY—Big Ridge Oil Co.'s Hingin 1, se se 13-7n-10w, co 2150 ft.

JONES COUNTY—Snow-Black Pet. Co.'s Cranford 1, s½ nw 29-7n-12w, woc 15-in csg.

LAMAR COUNTY—Sun Oil Co. et al's Mrs. K. Talley 1, se sw 28-4n-15w, 13⅜ in csg 244 ft, dr 1600 ft shale.

SIMPSON COUNTY—Goodwill O&G Co.'s Berry 1, 33-2n-4e, rog.

YALABOUSHA COUNTY—G. M. Langston et al's W. C. Bryant 1, ne sw 21-24n-6e, dk.

NEW MEXICO

LEA COUNTY—Anderson-Prichard Oil Corp.'s E. J. Wells-Conoco 1, c se se 5-25s-37e, mim. Jim Brown & Reynolds' Parcell-Conoco 1, c nw se 8-21s-36e, elev 3573 ft, top anhydrite 1616 ft, base salt 2820 ft, cem 5½-in pipe 4200 ft, td 4378 ft, flowed 20 bbls oil 16 hrs via cas, with little formation or drilling water, run tubing to test. Amon G. Carter et al's E. M. Elliott 2, c ne nw 22-22s-37e, elev 3375 ft, td 3622 ft, flowing by heads, fsh tools. J. C. Clower et al's W. H. Turner 2, sw sw se 29-21s-37e, elev 3464 ft, dr 1950 ft. Continental Oil Co. et al's Danciger 1, c nw ne 8-23s-36e, elev 3487 ft, dr 3335 ft; J. M. Skaggs 1, c ne se 24-20s-37e, elev 3555 ft, showed 150 ft drilling fluid with trace oil and no gas on dst at 3798-3851 ft, cem 5½-in cas 3796 ft. Culbertson, Erwin & Stovall's J. R. Stuart-Repollo 2, nw se se 10-25s-37e, elev 3108 ft, tested 20,000,000 ft gas 3380 ft, td 3421 ft, swabs 75 bbls oil; Stuart-Repollo 3, ne se sw 10-25s-37e, elev 3111 ft, lcn. El Paso Nat'l Gas Co.'s W. H. Harrison 1, c nw nw 7-25s-37e, elev 3181 ft, td 3558 ft, used 3000 gals acid, pb to 3300 ft, used 3000 gals acid, complete 3,500,000 ft gas. A. R. Eppenauer et al's F. B. Stuart-Amerada 1, ne ne ne 22-25s-37e, elev 3082 ft, top anhydrite 1000 ft, top salt 1200 ft, td 3050 ft, cem 6⅝-in cas 2898 ft. J. E. Farrell & Co.'s E. W. Walden-Amerada 1-A, c sw nw 15-22s-37e, elev 3407 ft, rust, td 3558 ft; Walden-Amerada 1-C, c sw sw 15-22s-37e, elev 3385 ft, shot 280 qts nitro 3540-3680 ft, td 3686 ft, co and flows 60 bbls daily. Gulf Oil Corp.'s C. L. Hardy 1, c se sw 20-21s-37e, elev 3492 ft, cem sur cas; H. T. Mattern 1-B, ne ne se 30-21s-37e, dr 1400 ft; Carson 1, lcn. Herschbach Drl. Co.'s Seth Alston-Conoco 1, c sw ne 31-17s-37e, elev 3775 ft, dr 1200 ft. Harry W. Leonard et al's B. T. Lanehart 3, c ne nw 21-25s-37e, elev 3081 ft, lcn. Magnolia Pet. Co.'s Will Cary 2, c ne sw 21-22s-37e, elev 3359 ft, top lime 2765 ft, flows by heads, dr 3620 ft; State 1-G, nw nw ne 24-17s-34e, elev 4019 ft, top anhydrite 1700 ft, top lime 4378 ft, pb fr sul w 4902-4905 ft, to 4704 ft, shot 580 qts 4618-4772 ft, swabbed 42 bbls oil, sd and filled 2200 ft oil in 5 hrs, sd for acid. Maljamar O. & G. Corp.'s Baish 8, c sw ne 21-17s-32e, elev 4022 ft, shot 20 qts 2320-38 ft, swabs 45 bbls oil, td 2352 ft. Ohio Oil Co.'s J. W. Grizzell 1, c sw se 5-22s-37e, machine. J. L. Perry et al's E. M. Elliott 1, se se se 19-21s-37e, elev 3496 ft, rig. N. G. Penrose & Rowan-Nichols Oil Co.'s Cary-Humble 3, c se nw 22-22s-37e, elev 3364 ft, dr 1400 ft. Plains Prod. Co. et al's J. A. E. Knight-Humble 4, c sw sw 22-24s-37e, elev 3225 ft, dr 3360 ft. Repollo Oil Co.'s Fowler Hair 1, nw nw nw 9-24s-37e, elev 3267 ft, dr 2535 ft; J. T. Lanehart 1-A, rig; Dale H. Parke 1-D, lcn; Frances Stuart 2-B, lcn; Robt. Jamison 2, sw sw nw 22-24s-37e, elev 3236 ft, shot 100 qts 3424-75 ft, td 3485 ft, flowed 45 bbls oil 12 hrs; R. L. Mosley 1, nw sw se 34-24s-37e, dr 2575 ft. Samedan Oil Corp.'s S. B. Hughes 3, c ne se 4-23s-37e, elev 3311 ft, dr 1300 ft. Shell Pet. Corp.'s J. F. Black 2, c sw se 21-24s-37e, elev 3219 ft, making gas, dr 3215 ft. Skelly Oil Co.'s Ellen Sims 2, c sw ne 3-23s-37e, elev 3301 ft, flows 25 bbls per hr, dr 3588 ft; J. V. Baker 4, c sw nw 27-22s-37e, elev 3341 ft, dr 3100 ft; G. W. Sims 2, c ne ne 9-23s-37e, lcn; R. R. Sims 2, c ne sw 3-23s-37e, elev 3298 ft, shot 180 qts 3524-89 ft, td 3600 ft, complete, flowed 390 bbls oil 11 hrs and 2,500,000 ft gas; R. R. Sims 3, c sw se 4-23s-37e, lcn; R. R. Sims 4, c se sw 4-23s-37e, lcn; R. R. Sims 1-C, c se sw 3-23s-37e, elev 3297 ft, td 3388 ft, dr by at 3360 ft. Stanolind O. & G. Co.'s C. Myers 1, c ne sw 22-24s-37e, elev 3256 ft, show o & g, fsh 3468 ft; C. Myers 2, sw sw sw 4-24s-37e, lcn; C. Myers 3, c ne se 4-24s-37e, lcn; Eva Owens 1, c sw nw 3-22s-37e, lcn. Mac Stauffer et al's L. E. Grizzell-I. T. I. O. 1, c nw ne 8-22s-37e, elev 3425 ft, dr 2475 ft. W. H. Street et al's Wood-Humble 1, near c se ne 22-22s-37e, elev 3355 ft, td 3654 ft, used 2000 gals acid and flowed 65 bbls oil, sd for shot. Sun Oil Co.'s I. R. Stuart 2, c sw ne 15-25s-37e, dr 1350 ft. The Texas Co.'s J. P. Alexander 1, c lot 14, 5-21s-37e, elev 3490 ft, dr 3600 ft; Jas F. Black 2, c ne sw 21-24s-37e, elev 3231 ft, dr 2100 ft; C. P. Falby 1, c ne nw 8-22s-37e, rur. Tide Water Associated Oil Co.'s Coates 1-B, c nw nw 21-25s-37e, elev 3073 ft, pb fr 3077 ft to 3032 ft, shot 160 qts 2917-3027 ft, complete flowed 32 bbls initial; R. M. Marshall 1, c sw ne 13-21s-36e, dr 660 ft; Ann Walden 2, c sw ne 21-22s-37e, elev 3360 ft, dr 3490 ft.

ROOSEVELT COUNTY—Clovis Dev. Co.'s S. Smith 1, c se ne 17-2s-30e, elev 4597 ft, sd in lime and shale 5195 ft. Franklin Oil Corp. et al's Rual Giphant 1, nw nw nw 28-3n-30e, elev 4458 ft, sd in salt 2510 ft.

OKLAHOMA

ATOKA COUNTY—A. J. Sanders' Redden 3, se sw sw 19-1n-5e, mirt, 1275 ft.

BECKHAM COUNTY — Carter Oil Co.'s Garrett 1, ne ne ne 11-17n-25w, dr 1275 ft. Mid-American Oil Co.'s Briscoe 1-A, sw sw sw 28-8n-22w, dr 385 ft.

CADDO COUNTY—Clyde Becker et al's Pharris 1, cse se nw 24-6n-12w, der corners.

CARTER COUNTY—Lyle-Wham Dev. Co.'s Jackson 1, cne sw sw 26-5s-1e, sdo. Helmerich & Payne's Wolverton 1, se ne nw 21-3s-1w, lcn.

CHOCTAW COUNTY—Cooper & Branstetter's Bell 1, cnw ne 29-6s-17e, sd.

CLEVELAND COUNTY — Hollenback's Stinson 1, nw nw ne 17-9n-2w, rur.

COAL COUNTY—Ruwaldt & Couch's McMillan 1, sw sw sw 10-1s-8e, td 1343 ft, lower 5-in csg.

COMANCHE COUNTY — Frank Scott's Kuntz 1-A, cse ne se 21-4n-11w, sd 2210 ft. C. V. Morris, Young 1, se ne se 24-3n-10w, sd 822 ft.

CREEK COUNTY—J. E. Crosbie & Sinclair Prairie's Bailey 1, ne nw nw 28-16n-8e, sd 3055 ft. W. J. Sherry's Childers 1, sw sw nw 2-15n-7e, dr 1240 ft. M. W. Mosier et al's Holcomb 1, se sw ne 19-18n-8e. sd 2935 ft.

GARFIELD COUNTY — Arab Oil Co.'s Harkendorf 1, ne ne ne 34-20n-3w, dr by 2350 ft.

GRADY COUNTY—R. E. Johnson et al's

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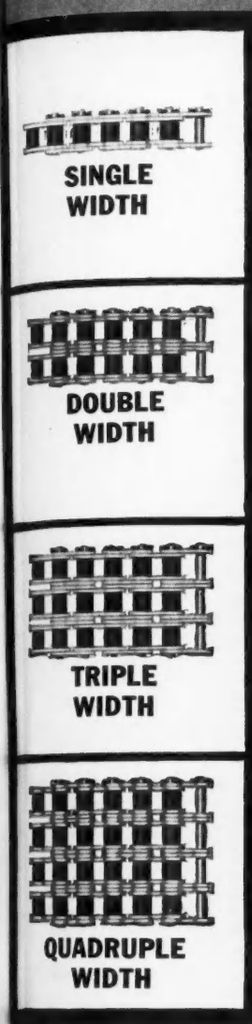

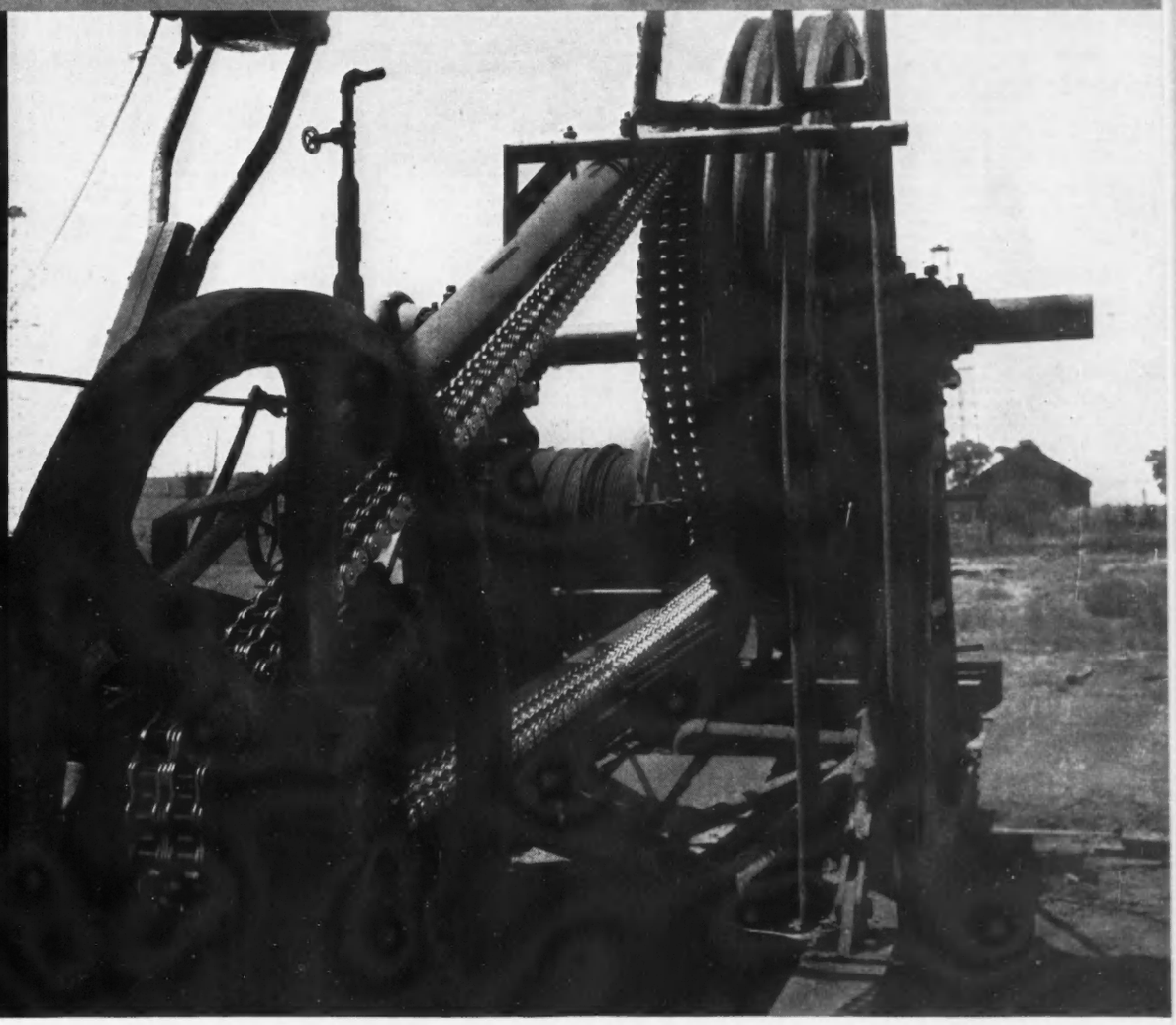

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LINK-BELT *Silverlink* ROLLER CHAINS

Thomas 1, sw se sw 18-5n-7e, mir. Western White Lily Oil Co.'s Stover 1, cse sw nw 33-3n-7w, sd 1110 ft.

HARMON COUNTY—Lioalko Trust, Ltd.'s Crosnoe 1, se se sw 14-3n-25w, td 3363 ft, D&A.

HUGHES COUNTY—Carson Oil Co.'s Lyter 1, ne nw sw 31-8n-12e, td 4802 ft, to core. Mid West Oil Co.'s Turner-Lucas 1, cse nw 13-9n-9e, sd 2942 ft. Wrightsman's Diamond 1-A, se ne ne se 33-9n-9e, dr 3335 ft.

JEFFERSON COUNTY—Buffalo Oil Co.'s Crown-Over 1, cse se nw 21-6s-6w, dr 1615 ft. Massad & Swansberger's Barrett 1, ne se se 14-6s-6w, sd 1538 ft. Olson, Heenan & Coe Oil Co.'s Rose 1, csw sw 1-5s-5w, wo tools. Cap Fields et al's Trout 1, ne ne sw 5-8s-7w, dr 873 ft.

JOHNSTON COUNTY—Patton et al's McCrummens 1, sw sw ne 16-1s-6e, sd 1155 ft.

KAY COUNTY—G. A. Brown et al's Harris 1-A, sw sw ne 14-25n-1e, spd 26 ft. Ritz O&G Co.'s State 1, nw ne sw 16-29n-2w, test & wo orders.

KIOWA COUNTY—Argus Pet. Co.'s Osbourne 1, nw nw ne 9-7n-16w, fsg 1225 ft.

LATIMER COUNTY—Clark Drlg. Co. et al's Wilson 1, cse se 15-5n-18e, dr 3575 ft.

LINCOLN COUNTY — Anderson-Prichard's Colon 1, nw se sw 28-17n-4e, est 5 to 10,000,000 cf gas, si to rust. Mid-Continent Pet. Corp.'s Logan 1-A, ne ne se 31-11n-5e, dr 1235 ft.

LOGAN COUNTY — Harry Blackstock's Prince 1, se ne sw 11-17n-3w, dr 6015 ft. Helmerich & Payne et al's Ruck 1, cne se 9-19n-2w, dr 1870 ft.

LOVE COUNTY—Sinclair Prairie's Stockton 1, se se sw 26-6s-2w, fsg 6927 ft. Sadson-Wells Pierson's Key 1, cse se nw 6-8s-1w, dr 2060 ft.

MARSHALL COUNTY—Stewart & Taylor's Chestnut 1, ne ne ne 23-8s-5e, td 803 ft, sd.

MURRAY COUNTY—Russell's Fee 1, se nw se 9-2s-3e, ur 6⅝ in csg 1100 ft. Power Oil Co. et al's Lancaster Trust Co. 1, csw ne 10-1s-2e, pb 3175 ft, woc.

NOBLE COUNTY—Lincoln Oil Co. et al's Neil 1-A, ne ne ne 15-23n-2w, rur.

OKFUSKEE COUNTY—Harvey Oil Co.'s Stewart 1, ne ne ne 28-10n-9e, lcn abd.

OSAGE COUNTY—Norbla Oil Co.'s No. 1, ne ne se 13-23n-6e, fsg 760 ft.

PAWNEE COUNTY — Forest Dev. Co.'s Greisel 1, cnw ne 21-21n-5e, td 3275½ ft, D&A. Forest' Markham 1, sw ne se 10-21n-5e, dr 240 ft.

PAYNE COUNTY—H. F. Young's Jenkins 1, se ne se 4-17n-3e, dr 4595 ft. Bill Riddles' Van Zandt 1, nw nw se 16-18n-3e, C&P.

PITTSBURG COUNTY—Okla. Dist. Co.'s Beeler 1, ne ne sw 7-7n-14e, sd 5165 ft.

PONTOTOC COUNTY — E. H. Moore's Muse 1, sw ne se 33-2n-7e, dr 4595 ft.

POTTAWATOMIE COUNTY — Champlin Ref. Co.'s Buckler 1, se ne ne 7-6n-4e, dr 1700 ft.

PUSHMATAHA COUNTY—Erle Halliburton et al's Bogwell 1, sw ne ne 30-3s-15e, woc 840 ft.

SEMINOLE COUNTY — Hudson et al's Tanyan 1, se se sw 32-10n-7e, dr 480 ft. Sinclair Prairie's Rossanna 1, nw nw sw 28-10n-8e, woc 3405 ft. Papoose Oil Co. et al's Yarber 1, sw sw ne 15-11n-18e, td 3615 ft, D&A. Amerada & Stanolind's Face 1-A, sw sw sw 12-9n-7e, dr 2280 ft. J. E. Hall et al's White 1, se nw se 30-6n-8e, dr 2190 ft.

STEPHENS COUNTY—Edward's Frederick 1, ne se nw 31-2n-8w, set 6⅝ in csg 2716 ft. Carter's Harley 1, cne ne 24-2s-4w, cor. Wm. Angle et al's Posey 1, cnw nw 8-1n-8w, sd 4457 ft. Helmerich & Payne's Graham 1, csw sw ne 12-1n-5w, dr 4270 ft. Ed Parson's Olson 1, csw sw 21-2n-8w, td 7002 ft, to test. B. F. Lundy's Calmes 1, cnw sw se 35-1n-4w, sd 795 ft Penn State Oil Co.'s Cole 1, cw½ sw nw 21-2n-8w, der.

TEXAS COUNTY—Cabot Carbon Co.'s Castro 1, cne 19-3n-17ecm, dr 2356 ft. Missouri Valley Gas Corp.'s Fitzgerald 1, C sec 17-6n-14ecm, rig.

TILLMAN COUNTY—I.T.I.O. Co.'s Hatler 1, csw ne 32-2s-17w, run 2½-in tbng; 3600 ft fih; to pump. Skinner's Oliver 1, se se nw 22-1s-15w, sdo 1378 ft.

WASHITA COUNTY — John Koberg's Harms 1, cnw nw ne 6-10n-16w, der.

EAST TEXAS

ANDERSON COUNTY—Tom F. Hunter, Jack W. Frazier & American Liberty Oil Co.'s G. E. Gage 1 (160-ac), C. B. Gilbert sur, 2 mi se Blackfoot, elev 384 ft, Pecan chalk 2850-3004 ft, Austin chalk 3980-4376 ft, top Woodbine 4782 ft, top Red Beds 4989 ft, top Georgetown lime 5631 ft, dr 6630 ft. Roeser-Pendleton, Inc.'s V. W. Bowyer 3 (200-ac), E. Ritter sur, Cayuga field Trinity test, elev 317 ft, rur. Tide Water Associated-Seaboard Oil Corp.'s Monnig Bros. 7 (3806.82-ac), Simon Sanchez sur No. 1-11, Long Lake field Trinity test, elev 233 ft, Pecan chalk 3565-3766 ft, Austin chalk 4687-4957 ft, top Woodbine sand 5273 ft, top Georgetown lime 5904 ft, dr 8000 ft.

BOWIE COUNTY—Ferguson & Hill's A. Y. Breckenridge 1 (412-ac), Nancy Dycus sur, 4 mi w Texarkana, top Nacatoch 740 ft, top Annona chalk 1308 ft, top Blossom sand 2063 ft, dr 2345 ft. Sutton & Hawkins' D. L. McDuffie 1 (336-ac), John Ball sur, 3 mi se New Boston, elev 333 ft, top Annona chalk 1472 ft, dr 5005 ft.

CHEROKEE COUNTY—Joe Sanders et al's J. W. Ware 1 (106-ac), J. L. Trimble sur, top Pecan chalk 2730 ft, dr 2810 ft.

DALLAS COUNTY—Mauldin Oil Co.'s W. E. Howell 1 (107.7-ac), S. Layton sur, sp and sd.

DELTA COUNTY—F. J. Estes et al's W. S. McGee 1 (207-ac), J. G. Oliver sur, 2 mi sw Klondike, elev 449 ft, top Georgetown lime 3305 ft, sd 3981 ft.

FALLS COUNTY—J. Edward Mills et al's Sam Grucholski 1 (40-ac), Dennis Herold League, 5 mi sw Kosse, elev 521 ft, top Edwards lime 3867 ft, top upper Glen Rose 4074 ft, dr 4765 ft.

FREESTONE COUNTY—C. F. Lytle et al's Roy Simmons 1, R. B. Longbotham sur, ¼ mi s Wortham, in depleted section field, rur for Trinity test.

GRAYSON COUNTY—Olson Drlg. Co., Jas. H. Gardner, Broswood Oil Co. et al's D. R. Utiger 1 (160-ac), P. P. Cady sur, 5 mi nw Denison, Preston Anticline, elev 722 ft, base Trinity 930 ft, top Woodford chert 955 ft, top Viola cherty-lime 1570 ft, top Stringtown shale 1854 ft, lime 2415-2575 ft, Blakely sand and dolomite 3783-3941 ft, dr 5125 ft.

HENDERSON COUNTY — Humble, Tide Water Associated & Seaboard Oil Corp.'s McElreath-Suggett 1-C (149-ac), W. P. Wyche sur, 1½ mi nw Opelika, Trinity test, elev 394 ft, Pecan chalk 2580-2730 ft, top Austin chalk 3710 ft, dr 4685 ft. E. B. LaRue et al's Amicable Life Ins. Co. 1 (1851-ac), Phillip Jackson sur, 2½ mi w LaRue, Trinity test on LaRue salt dome, lcn.

HOPKINS COUNTY—Empire O&R Co.'s J. E. Worsham 3 (149.36-ac), A. O. Wetmore sur, elev 430 ft, top lime 3750 ft, Paluxy pay 4483-4548 ft, flowed 12.43 bbls oil per hr, ¼ in choke; Worsham 4, mim. Walter L. Goldston-Big State Oil Corp.'s H. J. Smith 5 (450-ac), J. A. Craft sur, elev 443 ft, top Georgetown lime 3661 ft, Paluxy pay 4486-4549 ft, testing; Smith 12, rig. D. S. Hager & W. P. Luse's J. G. Reynolds 3 (200-ac), A. O. Wetmore sur, elev 418 ft, top lime 4260 ft, Paluxy pay 4480-4537 ft, completed, flowed 25 bbls per hr via tubing; Reynolds 4, mim. Hager-Luse & Russ Pet. Co.'s Jeff M. Worsham 3 (39.82-ac), Wetmore sur, mim; S. B. Pierce 1 (97-ac), J. A. Craft sur, elev 427 ft, dr 150 ft. F. D. Jones Drlg. Co. et al's Mrs. S. B. Pierce-Gulf 8 (300-ac), J. A. Craft sur, elev 443 ft, Paluxy pay 4434-4507 ft, flowed 105 bbls oil 1½ hrs via ¼-in choke; Pierce-Gulf 10, elev 449 ft, top lime 4145 ft, pay 4455-4521 ft, flowed 58 bbls per hr ¼-in choke; Pierce-Gulf 6, dr 3000 ft; Pierce-Gulf 9, dr 3010 ft. Shell's J. G. Reynolds 2 (200-ac), A. O. Wetmore sur, elev 413 ft, cem sur cas.

HOUSTON COUNTY — American Liberty Oil Co. et al's J. A. Bean 1 (61.02-ac), Green Evans sur, nw Grapeland, elev 489 ft, top broken Pecan chalk 4623 ft, base chalk 4899 ft, Austin chalk 5614-5938 ft, top Woodbine series 6018 ft, gas pay to 6064 ft, water sand 6089-95 ft, dr 6128 ft. A. D. Hudspeth and Sunray Oil Co.'s A. B. Spence 1 (291.2-ac), Collin Aldrich sur, 2 mi sw Grapeland, elev 293 ft, Pecan chalk 4660-4962 ft, Austin chalk 5647-5958 ft, top Woodbine series 6043 ft, tested sw with trace gas 6040-68 ft, dry and abd 6250 ft. Hunt Oil Co.-Shell Pet. Corp.'s J. E. Elliott 1 (200-ac), J. M. Procella sur, 6 mi ne Grapeland, dr 3050 ft. E. R. Mount, Branch et al's Dr. P. S. Griffiths 1 (136-ac), Frank Johnson sur, 3 mi se Crockett, sd 1740 ft. Ridgeway and Jackson's H. F. Moore 2 (53-ac), H. Mester sur, 2 mi se Crockett, elev 337 ft, dk.

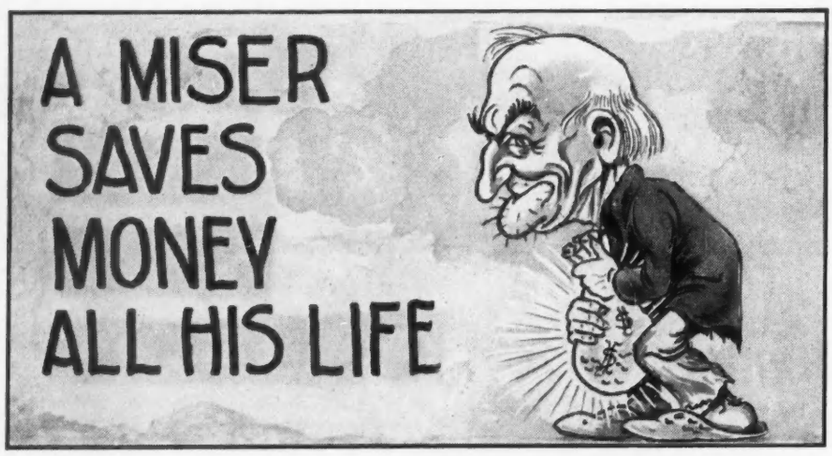
HUNT COUNTY—Penn Oil Corp., Elmer S. & Fox Wood's A. B. Parrish 1 (200-ac), Nancy Danley sur, 7 mi ne Lone Oak, dk. The Texola Land Corp.'s J. M. Goin 1 (250-ac), Jas. Merrick sur, 2 mi sw Wolfe City, sp and sd.

KAUFMAN COUNTY—J. M. Scott and J. B. Woodside's Wood & Temple Nash 1 (80-ac), Juan Cortez sur, 1 mi e Scurry, mim.

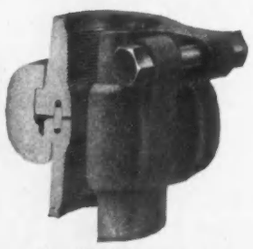
LEON COUNTY—H. M. Ogg et al's O. Wiley 1, E. Devinney sur, 1 mi w Buffalo, dk.

LIMESTONE COUNTY—Pure Oil Co.'s W. B. Kendrick 16 (96-ac), Pedro Varella sur, 3 mi w Mexia, Mexia field Trinity test, rur. A. W. Phillips, J. Johnson et al's E. M. Speight 1 (136½-ac), M. Herrin & Pedro Varella sur, 4 mi ne Groesbeck, elev 415 ft, Pecan chalk 2450-2520 ft, Austin chalk 2720-3003 ft, sd 3695 ft.

RED RIVER COUNTY — Carpenter Oil Corp.'s R. E. Anderson 1 (100-ac), S. W. Sims sur, 3 mi n Clarksville, elev 459 ft, top Red Beds 1250 ft, top Paluxy series 1845 ft, top



—AND STAYS *tight* UNTIL THE END



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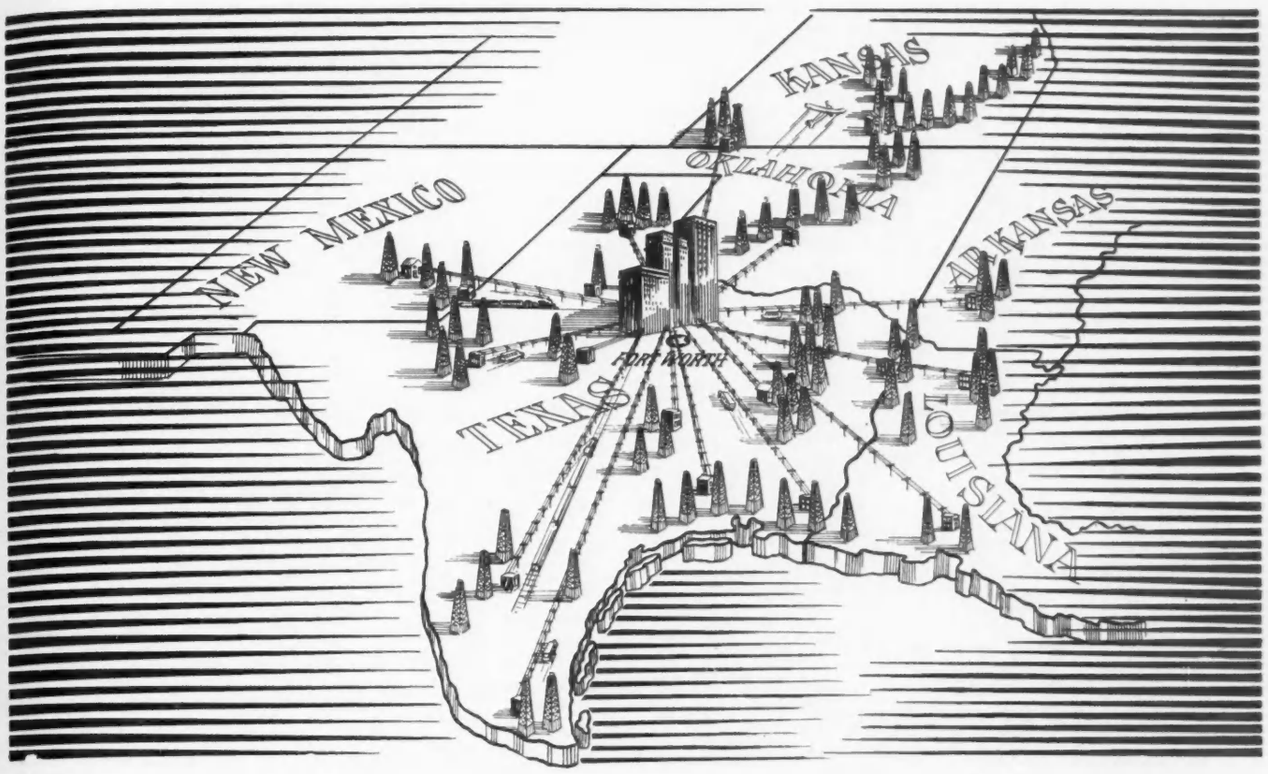

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anhydrite 2590 ft, td 3018 ft, sd but may dd; J. M. Roberts 1 (100-ac), John Ware sur, 10 mi ne Clarksville, electrical logging tool shows oil saturation in Paluxy 1114-35 ft, td 1180 ft, cem cas.

ROBERTSON COUNTY—J. Edward Mills et al's Tony Congelosi 1-A (75-ac), Geo. A. Nixon sur, 3 mi sw Hearne, skid rig and sd.

TITUS COUNTY—J. Z. Werby et al's Sam Williams-Strutton 1 (40-ac), MEP&P Ry. sur, Talco area sub-Trinity test, elev 341 ft, top Georgetown lime 3505 ft, top Paluxy series 4275 ft, sw at 4498-4510 ft, anhydrite series 5434-5676 ft, dry and abd 6214 ft. J. V. McMahon, Geo. H. McIntyre et al's J. B. Stevens, Jr. 1 (777½-ac), J. Muechen sur, 7 mi sw Mount Pleasant, elev 349 ft, Pecan chalk 2290-2600 ft, jkd and abd in lime 5074 ft.

UPSHUR COUNTY — Frank Linbart & Kightlinger's F. W. Fair 1 (100-ac), H. W. Augustine sur, 4 mi se Big Sandy, cem sur cas.

VAN ZANDT COUNTY—Humble's L. K. Riggs 1 (74-ac), Wm. Daniel sur, ne edge Van field, rur. Stroud & E. N. Lowe's P. L. McNeill 1 (104-ac), J. W. Guest sur, 4 mi n Ben Wheeler, elev 510 ft, sp and sd.

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SOUTH TEXAS

CORPUS CHRISTI DISTRICT

ARANSAS COUNTY—Barnsdall Oil Co.'s Kate Edwards 1-A, W. Lewis sur, Lamar prospect, dr 5348 ft. Collins & Wilkerson's McCampbell 1, blk 10 McCampbell sur, td 6551 ft, ran Schlumberger T/sand 6546 (?).

BEE COUNTY—Benson & Jones' G. A. Ray 1, A. Burk sur, sd 5375 ft. Dirks Bros.'s Tom Strauch 1, sec 19, Chittem Ranch, snd 4267-75 ft, dst 15 min 1450 ft, plo ¼ & ⅜ in ch, Yegua sand. J. R. Dougherty's L. E. Weiss 1, J. M. Uranga gr, sd 4501 ft. W. C. McBride, Inc's Brown and Hanson 1, J. W. Copeland sur, Pettus sand 3580-3615 ft, no show, sd 3664 ft. H. H. Weinert et al's James Smith 1, J. R. Johnson sur, dr 1200 ft.

BROOKS COUNTY—Standard Oil Co. of Texas' Mestina (Lease 2) 1, tr 11, R. G. Salinas sur, 6 mi Alta Mesa pool, sp. Texas Gulf Prod. Co.'s T. S. Proctor 1, blk 2, sec 20, Los Olmos & Blanco sur, dr 2500 ft.

CAMERON COUNTY—Stapper Pet. Corp.'s Port Isabel 1, blk 17, Port Isabel sub, Espiritu Santo gr, dr 4600 ft.

DEWITT COUNTY—George B. White et al's W. L. C. Poetter 4, W. C. Brown sur. T/sand 4216 ft, snd and sndy sh 4216-25 ft, show gas 4225-27 ft, show oil, dr to 4457 ft, sd woo.

GOLIAD COUNTY—R. B. Swiger's Carrie Wood 1, blk 23, Swiger sub, Villa sur, sd 6004 ft, woo.

HIDALGO COUNTY—Gulf States Oil Co.'s J. Engelman 3, lot 3, blk 70, Mestina gr, set 3100 ft 5 in csg, testing snds topped at 7860 ft and 8020 ft. Henshaw Bros.' Flores 1, tr 250, por 39, n Samfordyce field, td 4140 ft, comp as 1250 lb gas well thru perf, opens new sand for field. Sterling O & R Co.'s J. C. Engelman 1, lot 5, blk 95, Mestinas gr, dr 6858 ft.

JACKSON COUNTY—Cockburn Oil & T. Hargrove's Santa Theresa Farms 1, tr 34, sec 23, I & G N sur, lcn. Shell Pet. Co.'s T. N. Mauritz 1-B, O. S. York sur, ab 306, dr 2082 ft. Steinberger Pet. Corp. & Chicago Gulf Corp.'s Lon Rogers 1, Rodriguez sur, td 5040 ft, perf 4777-87 ft, comp, est 10 bbls distillate per day, ⅛ in ch pb td 4788 ft. The Texas Co.'s T. N. Mauritz 1, Morris & Cummings, ab 305, dr 1800 ft.

JIM WELLS COUNTY—Arkansas Fuel Oil Co.'s G. H. Bierstadt 1, blk 32, J. Reynolds sur, td 5017 ft, T/sand about 4802 ft, pb to 4650 ft to STH and re-core snd. t/17 ft has good kick on electrical formation tester. Baltic Dr. Co.'s R. W. Owens 1-A, Poitevent sur, dr 5310 ft. Tom Graham's J. Luby Est 2, sh 4, Los Presnos de Abajo Gr, td 5792 ft, pb and set csg 4030 ft snd comp, no gauge. Stanolind O & G Co.'s J. W. Bird 1, Los Presnos de Abajo Gr, se csg 5835 ft, perf 4048-70 w/10 shots, in process of completion. Tsesmelis & Reese's Martha Earhart 1, J. Suggs sur, ab 447, dr plugs 300 ft.

KARNES COUNTY—Victoria Dr. Co.'s Yohn Yanta 1, S. G. Hardaway sur, still sd 1575 ft.

LAVACA COUNTY—Willshite Union Oil Co.'s A. Pohl 1, M. Wooten sur, still sd 3135 ft.

LIVE OAK COUNTY—R. A. David et al's Border Nat'l. Bank 1, 100-ac Brown tr, Stephen Hays sur, dr 300 ft. R. H. Feltner's Sanger Ranch 2, GC & SF Ry. sur No. 385, clearing lcn. Henderson Coquat & Conservative Oil Co.'s L. A. Reagan 1, S. McGloin sur, sd 3200 ft. Marzo Oil Co.'s Mrs. Bessie X. Chestnut 1, V. L. Ayera sur, Pettus and 1240-48, sd, woo, may deepen to Yegua. L. W. Stieren's Lange 1, sec 13, Simmons sur, T. Adams sur, ru.

NUECES COUNTY—Allen & Seaboard Oil Corp.'s J. O. Chapman 2, sec 38, Laureless Gardens Tr, 6717 ft, set 7 in dst 6588 ft, perf 6460-67 ft, well began making oil est, 400 to 500 bbls day, ¼ in ch, plo & no wtr oil, new oil field. Mills Bennett's I. O. Lamb 1, J. V. L. de Herera sur, dr 7157 ft, ran electrical formation tester at 7012. Camp Production Co.'s C. P. Wardner, Tr 1, sec 12, Stratton sub, reaming 4890 ft, dst 4706-76 ft, 400 pounds pres, one stand gasoline and mud, 6¼ min. E. M. Jones' Lucy Cooke 1, Quadrilla Irr sur No. 139, sand gas odor 3532-39 ft, dr ahead in sh 3800 ft. Shell Pet. Co.'s State of Texas 1, 100.8-ac tr, Laguna Madre Bay, lcn. Sloan-Harvey & Green River Oil Co.'s E. Cassens 1, sec 26, Agua Dulce Farm lots, dr water well. Southern Minerals Corp.'s Richard King 1, sec 32, King Farm lots snd 4026-33 prep dst. Texon Royalty Co.'s Sevier 2-B, Chapman Lands, co hole & dr ahead 6024 ft. United Prod. Co.'s W. H. Harvey 1, Garcia sur, dr below 6900 ft. Wellington & Pan American Sevier 1-A, td 6075 ft, perf 5348-56 ft, comp, est 20 bbls gasoline per day, 1800 lbs pres.

REFUGIO COUNTY—United Prod. Co.'s J. J. O'Brien 12, Refugio Town Tracts, coring 7150 ft. Wyne Dr Co.'s Mrs. C. D. Roache 1, Downey sur, sd 5565 ft.

SAN PATRICIO COUNTY — Eleanor Oil Co.'s J. F. Green Est 1, T. T. Williamson sur, coring below 6300 ft. Phillips Pet. Co.'s H. Schmidt 1, sec 81, Paul sub, dr 5700 ft.

VICTORIA COUNTY—George H. Echols' W. H. Bennett 3, J. E. Galban sur, n of Heyser field, ru & sd. Magnolia Pet.. Co.'s Wagner 1, T & NO Ry sur No. 1, dr 3551 ft. Shell Pet. Corp.'s Houston Bank 1, S A & M G sur No. 7, sand series 4638-4765 ft, set casing 4756 ft, comp 9 bbls hr, ¼ in choke. Union Oil Co. of Calif.'s C. A. Keeran 3, M. de Leon sur, dr 4762 ft.

WILLACY COUNTY—Ruez-Morton, Inc.'s F. Amendiez 1, sh 4, San Juan de Carricitos Gr, dk and sd; Johnson-Stillman 1, blk 23, sh 44, San Juan de Carricitos Gr, sd 650 ft. Shell Pet. Corp. et al's Yturria 1, San Juan de Carricitos Gr, sh 64, La Sal Viejo, coring below 7910 ft.

LAREDO DISTRICT

DUVAL COUNTY—Atlantic Ref. Co.'s W. A. Lowe 1, sec 466, ru. A. J. Brinkoeter's P. Garza de Rodriguez 1, sur 212, 1 mi w prod in Seven Sisters field, dr 1400 ft. Clark & Cowden's J. M. Richardson 3, sec 5, lcn. Tom Graham's A. G. Villareal 1, San Andres Gr, lcn. Frank Gravis' F. Vaello Puig 1, San Andres Gr, dr 1500 ft. C. K. Gravis Jr.'s C. Holzapfel 1, J. Poitevent sur No. 42, snd 990-1040 ft, dst show wtr, dr ahead 1200 ft. Humble's C. D. Sevier 1, sec 329, abnd 4095 ft. Rio Bravo Dr Co.'s and George Coates' W. R. Peters 2-C, sec 398, sd 2675 ft. W. H. Wollett and M. D. Masten's Bishop Cattle Co. 1, sec 74, lcn.

JIM HOGG COUNTY—J. V. Adams et al's W. P. Allen 1, sec. 84, B. S. & F. sur, dr 750 ft. Cole Pet. Co.'s Yeager Ranch 1, sec 452, dr water well. French Oil Co.'s V. de Garza 2, sec 269, cored sand 1033-35 ft, 7 in csg 3033 ft, comp, 10 mcf gas per day. Gifford Oil Co. & Locke Purnell's E. L. Armstrong 1, sec 43, fsh 4358 ft for ds.

MCMULLEN COUNTY—Howell Oil Co.'s J. H. Martin Hrs 1, near Nueces r, set 60 ft 10 in cas, still wocs. Humble's R. B. Swiger 1, sec 46, will mim in 3 weeks. Edwin M. Jones' Harry Ezzell 1, sec 3, Ezzell Ranch sub, td 1255 ft, perf approx 1185-90 ft, comp 2 mcf gas, tp 430, cp 470 lbs, showing small amount brackish water. Snider et al's B. G. Claunch 1, M. Hely sur, Gov't. Wells sand 1052-58 ft, sd.

STARR COUNTY—John H. Clopton et al's Green 1, blk 5, sh 85, por 81, td 3808 ft, top oil snd 3806 ft, coming out of hole with cores; Tijerina 4, blk 12, sh 14-C, por 80, dr 1012 ft. Cook, Maris, Arnold's Starr County Cattle 2, blk 23, por 89, ru. G. E. Dodd's Wood Est 1, por 84, coring 1825 ft. Danray Oil Co.'s (McLeon et al) C. Ramos 1, sec 150 dr 500 ft. Glenn Harroun's V. C. Guerra et al 1, Tr B, Frank R. Campbell sub, ru. K. E. Metten's Starr County Cattle Co. 1, blk 34, por 89, dr 2748 ft. Moss & Heard's S. B. Ricaby 3, por 83, coring 1350 ft. F. P. Schwab and Fred Foster's Muno 1, Javali gr, lcn. R. Wheeles' S. Welsh 1, blk 1, Bateman sub, Pedernal Gr, lcn in Zapata county, drop fr this county.

WEBB COUNTY—J. M. Anderson's Juarez 1, blk 12, sec 111, dr 1907 ft. Bolling & Cof-

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50TH FLOOR STERLING BUILDING HOUSTON, TEXAS

fey's A. Villareal 1, blk 17, sec 767, clearing lcn. French Oil Corp.'s J. M. Garza Est 2, sec 1131, t/Mirando sand 2103, td 2107 ft, tested sw. Kepley Prod. Co.'s W. C. Billings 1, sec 6, lcn. O. W. Killam's Fee 1, sec 1690, sd 4766 ft, repairs; Daurrel Bros 1, sur 333, 3 mi ne Oilton lcn. Lu-Tex Oil Co.'s Lone Star Con Co. et al's 1-A, por 12, sd 1650 ft. J. Palmer et al's Laredo Nat'l. Bank, sec 463, dr 1480 ft. Wilcox O & G Corp.'s B. S. Dunbar 1, Joaquin Galan Gr. dr 5000 ft.

ZAPATA COUNTY—Mills Bennett's F. B. Martinez 1, sh 1, blk 84, El Grullo Gr, dr 400 ft. Fidelity O & R Co.'s Gopher 1, blk 9, sec 6, sh 8, Borrego Gr, sand 700-715 little odor, crg deeper. H. G. Lewis' S. Benavides 1, blk 39, Fansler & O'Hern partition, Villa Gr, dr below 40 ft. Magnolia Pet. Co.'s R. Cuellar 4, sec 245, sand 1221-36 ft, swabbed dry and coring ahead. The Zapata Corp.'s Justina Garcia et al 1, sh 3, Comitas Gr, td 1126, sand 1122 show oil, running cas.

SAN ANTONIO DISTRICT

ATASCOSA COUNTY: Frontier Oil Co.'s Oppenheimer 1, Sharp sur No. 318, pb from 2770 ft to 2667 ft and still bailing, may acidize. Helvetia Oil Co.'s Susie Pratt 2, F. de la Garza sur, Anchorage prospect, td 3460 ft, testing sand 2398-2424 ft. R. J. Roberts' J. M. Elder 1, D. Brister sur, dr 1700 ft.

BANDERA COUNTY—A. T. Crane et al's R. B. Watson 1, Curver sur No. 71, fsh 2035 ft.

BASTROP COUNTY—J. L. Collins Co.'s W. T. Turner 1, A. Litton sur, ru.

BEXAR COUNTY—American Gas Co.'s Oliver 1, Rodriguez sur, Gas Ridge, sd 3425 ft. W. D. Bacon et al's Seffel 1, Arocha sur, td 1400 ft, mi water to re-dr. J. H. Devine et al's Miholski 1-A, Bustillo sur No. 29, lowered 6-in cas to 360 ft, dr 400 ft. L. D. Ormsby's T. Barker 1, Baerrera sur, abd 947 ft. J. O. Williams' Hoch Est 1, J. M. Baerrera sur, prep re-dr 485 ft. Woodward & Hardie's Devilbiss 1, Devilbiss sur, ru spudder to dd from 2284 ft; Hermon Sons 1, Henry Pace sur No. 37, prep dr ahead 1720 ft.

BURLESON COUNTY—Red Bank Oil Co.'s Gramm 2, E. Santef sur, dr below sur cas.

CALDWELL COUNTY—G. A. McDonald's Mrs. A. C. Bridges 1, S. Seal sur, Dunlap area, bailing 2246 ft, prep acidize; W. T. Trammel 1, H. Hunter sur, 2 mi n Luling field, dr 2075 ft. H. F. Sackett & M. J. Keoughan's J. E. Cardwell 1, P. B. Bell sur, ru.

DIMMITT COUNTY—Porter & Connor's Tideman 1, sec 10, I&GN Ry. sur, blk 10, to start April 15. Wilcox O. & G. Co.'s Light Ranch 1, sec 67, I&GN Ry sur, wo rig fr No. 1 Dunbar.

EDWARDS COUNTY—Dan Auld's Rigsby 1, sec 16, GC&SF sur, nw cor of county, dr water well.

FAYETTE COUNTY—McNeil Pet. Co.'s Halff & Oppenheimer 8, S. A. Ditch sur No. 1104. Pearsall, dr 7090 ft; D. D. Harrison 1, S. Flores sur No. 306, dr 2612 ft.

GONZALES COUNTY—Canoe Creek Oil Co.'s W. L. Blotz 1, W. A. Matthews sur, 2½ mi se Otting, dk & sd. Tull et al's J. F. Bozka 1, McClure sur, dr 2601 ft.

GUADALUPE COUNTY—J. E. Clark's T. C. Anderson 1, Robt. Hall sur, Diamond Half Oil Co.'s E. Bibbs et al 1, I. W. Robinson sur, dr 2800 ft. Nick Marosis' Maierhofer 1, L. A. Peters sur, td 2175 ft, pb 780 ft, set 6-in cas 750 ft, wo ds to dr plugs. Kennedy & Crowley's (Walter Myrrick et al) Jahns 1, J. K. Davis sur, td 2507 ft, in chalk, broken materials with streaks like serp show oil last 28 ft, setting cas. Perot Oil Co.'s J. Priestly 1, Williams sur, td 2093 ft, bailed down 100 ft fr btm, rises to final fluid level of 1800 ft, mostly oil, some brackish water, placing on pump. Riddle Oil Co.'s Ned Herff 1, E. Gotari sur, dr 1905 ft, no chalk yet. S. Robertson et al's Blumberg 1, M. Baker sur, dr 780 ft sh. J. B. Stoddard et al's E. Harris 1, Dewitt sur No. 11, perf 1580-1625 ft, show sw & abd. W. Scott Townsend's Tom Terrill 1, J. Cantu sur, dr sh 300 ft. W. J. Walton et al's P. K. Delany 1, J. Cantu sur, dr 120 ft; Martin Hoffman 1, Dewitt sur No. 11, td 2665 ft, pb to 2535 ft, ran tbg, started flowing by heads, now installing pump.

KERR COUNTY—S. W. Forrester's J. W. Bailey 1, Starky sur No. 408, hole caving 856, wo csg.

LEE COUNTY—J. E. Pederson's C. A. Turner 1. D. Hudson sur, td 6560 ft, sidetracked and dr 6061 ft, swabbing little oil, 6-3/16-in cas 6010 ft.

MEDINA COUNTY—R. S. Bynum Jr.'s M. V. Melton 2, J. Fricker sur No. 14½, co 927 ft. Gates-Hull-Mead's Kreisle 1, sec 908, sp & sd. R. C. Hill's Odem 2, Castro sur, sd 360 ft. Lynd & Fondren's Lind 1, A. Smeller sur, sd 711 ft. Williams & Gulley's Moonan Ranch 1, Brunkhoff sur No. 318, hole caving 350 ft.

MILAM COUNTY—W. R. Ritchey's C. McDermott 1, J. R. Cockrill sur, sd 2520 ft.

REAL COUNTY—Sun Oil Co.'s Dietert & Oppenheimer 1, sec 7, GWT&P Ry sur, dr 5350 ft.

ZAVALLA COUNTY—H. F. Wilcox's T. J. Gillam 1, sec 11, GWT&T Ry sur, dr 2310 ft.

TEXAS GULF COAST

BRAZORIA COUNTY — Pure's Slade 1, Peach Point prospect, S. F. Austin sur, dr shale 4538 ft.

BRAZOS COUNTY — Crosby Drlg. Co.'s Lewis Orlando 1, T. H. Mays sur, dr shale 3788 ft.

CHAMBERS COUNTY—Kirby Pet. Co.'s Harden 1, w of Cotton Lake, M. L. Short sur, abn 6608 ft. Sun's White Estate B-1, Wm. Mays sur, dr shale 9113 ft.

HARRIS COUNTY—B. A. Farrell & J. B. Cox et al's Bender Estate 1, w of Humble field, M. W. Travis sur, preparing to test at 1182 ft. Stanolind's Oates 1, Clinton area, C. Martinez sur, coring gas sand 8059 ft; same operator's Warren Minerals 1, Hockley dome, H&TB sur No. 1, dr shale 6646 ft. Texas Gulf Prod. Co.'s Gillispie & Garnsey 1, Aldine area, S. Contreras sur, coring shale 7381 ft.

JEFFERSON COUNTY—Humble's Jefferson Land Co. 1, Cheek area, C. Hillibrandt sur, preparing to test 8083 ft.

LIBERTY COUNTY—Diadem Oil Corp.'s Pickett 1, Devers area, H&TB sur No. 10, abn 7506 ft.

MATAGORDA COUNTY — Continental's Robbins 2, Citrus Grove area, C. Franz sur, setting csg 8908 ft. Hammond Exploration Co.'s Croker 1, South Bay City field, E. Hall sur, testing at 8194 ft. Glenn H. McCarthy's Foley 1, Palacios prospect, L. Goodwin sur, dr shale 8550 ft. Sun's Craig 2, Hawkinsville, J. Williams sur, dr shale 3928 ft. United North & South Dev. Co.'s Stoddard 1, sw of Buckeye field, J. B. Cotton sur, running an electrical logging device at 8494 ft.

POLK COUNTY—Mayo et al's Mayes 1, w of Segno, J. G. Loving sur, dr shale 1160 ft.

WALLER COUNTY — Sumas Prod. Co.'s Menke 1, se of Hempstead, C. Donohue sur, sd woc at 5093 ft. H. E. Williams' G. C. Giddings 1, near Hempstead, J. Mouser sur, dr shale 3543 ft.

WHARTON COUNTY — Plummer et al's Logue 1, Spanish Camp prospect, S. F. Austin sur No. 3, testing 8199 ft. Texas Co.'s Kluck 1, Blue Basin prospect, J. Hyland sur, dr shale 6079 ft; same operator's Weatherer 1, e of Louise, Ogden sur, dr shale 5408 ft.

Catalogs... Bulletins

Packings

Durametallic packings of flexible, plastic metallic and mechanical seal are described in a new catalog issued by Durametallic Corporation of Kalamazoo, Michigan. The various styles of packing for all types of service are illustrated and described, along with recommendations for style of duty.

Sucker Rod Stocks

Sensing the need for a complete list of all locations of JoneSuckeRod field stocks, The S. M. Jones Company, Tulsa, Okla., recently published a small booklet showing the names and locations of all distributors stocks. Distributors names are arranged by states and then alphabetically by stocking points.

Synthetic Rubber

E. I. du Pont de Nemours Company, Wilmington, Delaware, recently issued a very instructive bulletin on its Duprene, a synthetic rubber. The bulletin tells in a non-technical manner of the development of this interesting rubber substitute.

Nickel Alloy Steel

The International Nickel Company, New York, has published an interesting booklet showing the applications of nickel alloy steels to the petroleum drilling and production equipment.

Fluid Meters

Bailey Meter Company, Cleveland, Ohio, recently issued an attractive 40-page bulletin describing its latest line of fluid meters.

Electric Meter Protector

Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., recently issued a publication describing its watthour meter protectors, which were designed for the protection of meters from lightning surges.

Flow Meters

The Brown Instrument Company, Philadelphia, Pa., has ready for distribution an attractive booklet describing its complete line of flow meters.

Wrenches

Lowell Wrench Company, Worcester, Mass., has issued a bulletin describing the company's line of ratchet, socket and reversible wrenches.

Smooth SURFACE

of WIRE WRAPPED SCREEN

assures less disturbance of sand

The Layne and Bowler Company, Houston, Texas

Export: Petroleum Machinery Corporation, 30 Rockefeller Plaza, New York, N. Y.

Sand is the cause of most well troubles and screen is installed for one purpose—to let the fluid in and hold back the sand.

The less disturbance a screen sets up in sand the cleaner will be the flow. This naturally brings about a reduction of wear on pump parts and valves.

Wire Wrapped Screen has a smooth surface, with uniform sized openings, contacting the sand, to give equal distribution of pressure over the entire screen.

The LAYNE WIRE WRAPPED SCREEN has the wire wrapped directly onto the pipe. This gives the wire a continuous solid base and precludes any possibility of the wire becoming indented at any point. The wire is held in place by vertical rows of 50/50 solder and is finished off at start and finish with tapered solder collars.

THE LAYNE WIRE WRAPPED SCREEN

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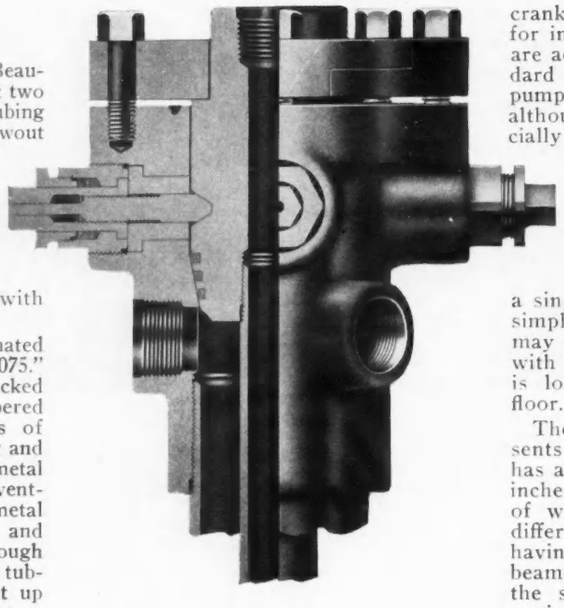
Machinery • Tools • Catalogs • Books

TUBING HEAD
Beaumont Iron Works Company

Beaumont Iron Works Company, Beaumont, Texas, has placed on the market two new 6,000-pound test pressure tubing heads, designed to be used with blowout preventer equipment for completion of the well under pressure. According to the manufacturer, these new tubing heads permit drilling in, running and landing tubing, setting packer, and re-working the well under pressure without killing the well with heavy mud.



These new tubing heads are designated as type "HX-1070" and type "HX-1075." T-segment bolts in the body are backed out until they seal off against tapered brass rings provided in the recess of thrust bolts. Body crews on oil string and master gate valve bolt down on a metal seal ring on top of body. Blowout preventer adapter flange bolts down on the metal seal ring on top of the gate valve, and well is drilled in and tubing is run through blowout preventers. The last joint of tubing is cut to desired length, or built up with pup joints, and screwed into hanger, which seats in tapered bowl of body and packs off on three rings of hydraulic packing. The four T-segment bolts, each provided with stuffing box are screwed into the hanger groove to seal in the well before the blowout preventer equipment is removed. After blowout preventer equipment is stripped off, a split locking ring bolts down over a lip on the hanger in place of the adapter flange. The hanger is threaded at top for a Christmas-tree connection.

The type "HX-1070" does not provide a means of setting the packer at the same time tubing is run. This feature, however, is included in the type "HX-1075," which is provided with a J-tool hanger to facilitate setting packer. Otherwise, the two heads are identical in design, all parts being interchangeable.

BEAM AND POST ASSEMBLIES
The National Supply Company

The National Supply Company, Toledo, Ohio, has announced the addition of two new models to its line of beam and post assemblies. These are known as Types SH-201 and SH-801. A series of four sizes is now available to cover the complete range of pumping requirements. These assemblies represent an economical means of pumping either single or multiple wells through back crank attachments. They are designed for installation on a concrete base and are adapted to reduction gears or standard rig cranks and crankshafts. Any pumping reduction gear may be used although National reduction gears especially applicable are available.

The Type SH-801 assembly has a rated polished rod stroke of 72 inches and an API rated load capacity of walking beam of 22,700 pounds. It is of the long beam working center design. This type makes possible the use of a single bearing beam hanger of great simplicity and durability. In addition it may be installed without interfering with the derrick or cellar as the beam is long enough to clear the derrick floor.

The Type SH-201 assembly represents the smallest size of the line. It has a rated polished rod stroke of 37½ inches and an API rated load capacity of walking beam of 9000 pounds. It differs from the three larger sizes in having an extended beam to receive beam counterweights. Otherwise it has the same design and operating conveniences as the larger sizes.

A bulletin describing these two sizes of Beam and Post Assemblies has just been published. It also contains complete descriptions of the other types comprising the entire line.

National Beam and Post Assembly

DRAW WORKS
The International Derrick & Equipment Company

The International Derrick and Equipment Company, Beaumont, Texas, has introduced a series of draw works called the "Giant" series. In these units this company pioneered the field in a pump driven oil circulating system for the chain, which system, with the use of cut-tooth sprockets and oil-tight chain housings, reduces chain wear to a minimum. In this design the oil is pumped from a reservoir to the chain housings, sprayed on the chain, and returned to the reservoir, keeping fresh clean oil on the chain at all times. The chain housings are completely sealed, protecting the chain from any sand, grit, or other foreign materials.

These draw works have other outstanding features, including a rugged unit type frame, heavy duty self-aligning roller bearings for the line and drum shafts, water-cooled brake flanges, compound equalizing brakes, and a floor type catline rope roller.

The "Big Giant" is the largest model of the series. It has a weight of over 40,000 pounds, and is designed for drilling deep wells. This draw works is equipped with a giant drum spool which increases the life of the wire rope and provides greater hoisting speeds at a given chain speed. Double strand chain is used for the three drum drives, and on one installation after drilling approximately 38,000 feet, the chain showed no sign of wear, it is claimed.

The second model of the series is the

The NEW IMPROVED

BACKSIDE ASSEMBLY

For Pumping Two or More Wells

with these SPECIAL FEATURES

1 THE BEARINGS in the new Assembly are all special Texasteel bearings — the main or saddle, and the rod line bearing are similar to those used exclusively on Texasteel Jacks with a choice of three types:

1. Bronze Bushed Alemite fitted with stuffing box type packing gland.
2. The same as No. 1 but not Bronze Bushed.
3. Has machined semi-steel bearings with a packed set collar packing gland.

The Pitman connection is a variation of the universal joint principle. It eliminates all unnecessary deflection strains, and assures perfect alignment. The wrist pin connection is based on the ball joint principle and is equipped with roller bearings.

2 THE ROD LINE connections are designed in a unique bridle arrangement so that the pull rod load is equally distributed on four bearing points. Self-alignment is assured.

3 IN PUMPING more than two wells the beam can be equipped with a long stroke, straight lift cable head. The counter balance weight can also be regulated very easily by a few turns of the crank.

4 STURDILY constructed Pendulum is composed of an I beam with the bearing shafts welded into its web. The frame is strong and sturdy, a design similar to the regular Jack frames. These assemblies are furnished with or without the counter balance beam, for the pendulum has a special casting to carry the beam.

WILL SAVE YOU MONEY

More efficient operation means more money to you . . . and these new Texasteel backside pumping Assemblies will do the job for you. They will pump two or more wells with a minimum of power and a maximum of trouble-free service. Texasteel engineers and field men have developed the new assembly through careful designing, experimenting, and field testing—the result of 18 years experience in the manufacture of pumping equipment. Notice the sturdy construction and the flexibility of all connections . . . then read the *four special* features that help you save money.

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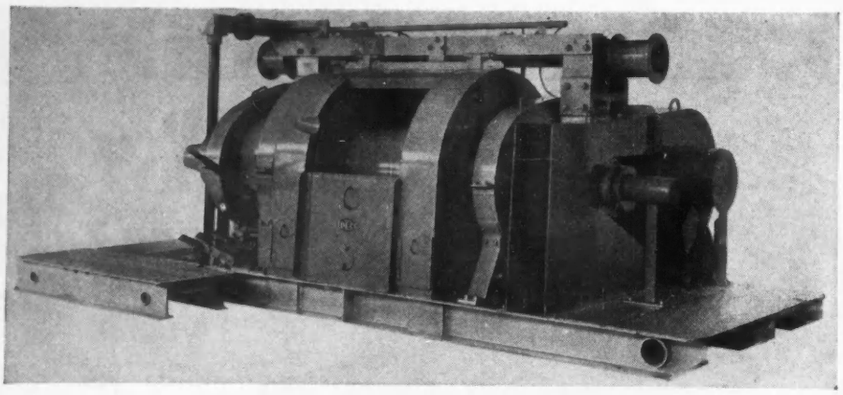


Ideco-Boykin Rotary Draw-works

"Junior Giant," which weighs approximately 35,000 pounds. It is designed for deep well drilling up to 9000 feet. One unit recently completed a well with a depth of 8700 feet.

The "Little Giant" is built with the same features as the other two models, and is designed for drilling to 6000 feet. It weighs approximately 20,000 pounds. This machine is equipped entirely with cut-tooth sprockets, including the rotary drive and engine drive sprockets.

This Week with the Industry's EQUIPMENT SUPPLIERS

Simon Transferred to Chicago; Roark to Houston

Z. R. Simon, representative for General American Tank Car Corporation in the Gulf Coast District for the past five years, has been transferred to the Chicago headquarters of the company. Simon has been relieved by R. J. (Bob) Roark, representative for the company for the past eleven years in Dallas. The Gulf Coast offices are maintained in the Petroleum Building, Houston, Texas.

McCullough Tool Appoints Rieger Texas Representative

Appointment of Goodson Rieger, former oil and gas supervisor for the Texas Railroad Commission in the Gulf Coast division, as sales representative for McCullough Tool Company has been announced by O. J. McCullough. McCullough Tool Company maintains headquarters in Los Angeles and has recently established office at 4000 Capitol Avenue, Houston, Texas. Rieger will cover the Gulf Coast and Southwest Texas areas.

Oster Manufacturing Company Elects New Officers

The following officers recently were appointed by the board of directors of The Oster Manufacturing Company of Cleveland, Ohio: R. B. Tewksbury, chairman of the board; Roger Tewksbury, president and treasurer; Arthur S. Gould, vice president, and Harry A. Maurer, secretary.

The first three named formerly acted in the capacities of president, vice president and secretary, respectively, while Maurer was general superintendent of the company's plants at Erie, Pennsylvania, and Cleveland, Ohio.

Tube-Turns Appoinnts Vinson Distributor

Tube-Turns, Incorporated, Louisville, Kentucky, announces appointment of Vinson Supply Company, Hunt Building, Tulsa, Oklahoma, as a Tube-Turn distributor. Vinson Supply Company will carry a complete stock of Tube-Turns and Tube-Turn supplementary welding fittings and forged steel flanges.

Pennsylvania Pump Appoints District Representatives

Pennsylvania Pump and Compressor Company, Easton, Pennsylvania, announces appointment of the following district representatives: McVoy-Hausman Company, 2019 Sixth Avenue, North Birmingham, Alabama; John A. Dodd, 101 Marietta Building, Atlanta, Georgia; and Ryan Sales Corporation, 160 Second Avenue, North Nashville, Tennessee.

W. C. Norris Transfers Branscum to Big Spring

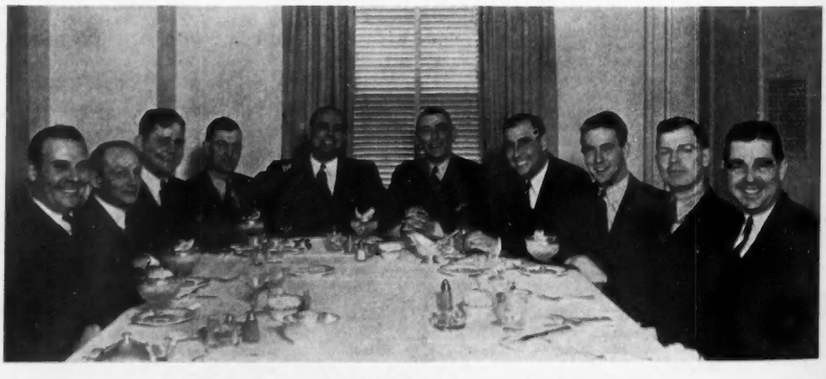
A. W. Branscum, who has been engaged in field sales for W. C. Norris, Manufacturer, Incorporated, for a number of years in Oklahoma, has been transferred to Big Spring, Texas, as manager of the company's branch located at that point. Branscum succeeds Glenn Holtzman, resigned.

Gas Lift Sales Moves to Larger Dallas Offices

Offices of Gas Lift Sales Company, Inc., in Dallas, have been moved from the Magnolia Building to larger quarters at 708 Santa Fe Building there.

E. H. JENSEN

E. H. Jensen has been transferred to Tulsa as general salesman with International Derrick & Equipment Company. He is covering the Oklahoma, Kansas and Texas Panhandle territories as well as special assignments in other territories. Jensen was in the East Texas field for the concern until his transfer at the end of the year.



To discuss sales plans in the Mid-Continent and Gulf Coast areas, the oil tool division of Byron Jackson Company recently held a sales meeting and banquet at Fort Worth. Pictured above, from left to right, are: Herb E. Grau, chief engineer, Los Angeles; Marshall Moore, D. O. Pugh, R. T. Todd, Frank Champion, general sales manager; C. F. Vincent, Mid-Continent manager; B. A. Hilliard, Gordon Leaf, H. M. Turnage and E. W. Stuart.

Pete Parker Joins National Tank Company

S. S. (Pete) Parker, formerly connected with Hydril Company of Texas at Houston as vice president and general manager, has joined National Tank Company. He will be located at Dallas, and will be in full charge of sales and service for the company from Louisiana to New Mexico. Offices are shortly to be opened in Dallas.

International Supply Appoints Two Managers

International Supply Company announces appointment of Roy A. Johnson as manager of its recently organized machinery department with headquarters at Tulsa, and A. B. Harrison as manager of Gulf Coast business, with headquarters at Houston. Johnson started in the supply game with Continental Supply Company under R. A. "Berry" Griffith in 1916, and Harrison started with Standard Oil Company of Indiana in the Mica grease plant at Whiting, Indiana, about the same time.

ROY A. JOHNSON

Johnson joined International Supply in 1925, and in 1927 transferred to Oil Well Supply Company in charge of Franklin engine sales in Kansas. In 1930 he joined Weber Engine Company, and since joining Atlas Supply Company at a later date, has represented Atlas and Weber in Kansas until being transferred to Tulsa in March, 1936. Here he was in charge of Atlas machinery sales, from which connection he went to International Supply Company.

Harrison, after many years spent with Standard Oil at Whiting and Sinclair Refining Company at Marcus Hook, Pennsylvania, where he was engaged in the development of the Isom process type of cracking unit, joined Hills-McCanna Company in 1925, promoting the use of aluminum bronze for cracking units and other oil industry uses. In 1927 he joined Chapman Valve Company at Philadelphia, from where he was transferred to Houston late in 1929. In 1934 he joined Coastal Supply Company.

C. L. REESE

C. L. Reese Returns from Trip To Rocky Mountain Area

C. L. Reese, salesmanager for Globe Oil Tools Company, Los Nietos, California, has returned to the home office after making an extended sales trip. Points visited included the Rocky Mountain territory where the company has recently opened an office at Laramie, Wyoming. Considerable time was spent in the Mid-Continent fields.

"Oil Royalties Worth More Under New Methods"

Of especial interest to the petroleum industry is a 32-page booklet entitled "Oil Royalties Worth More Under New Methods," written by Andrew M. Rowley, 215 Calumet Building, Tulsa, Oklahoma, former editor of The Oil and Gas Journal. The book has just come off the press and is ready for distribution by oil and royalty companies. Differing entirely from other treatments of the subject of oil royalties, the new booklet is a non-technical discussion of present day policies and production practices which affect the income from and the investment in petroleum royalties.

A. B. HARRISON

Royalty owners receive more than $200,000,000 each year from oil companies and operators as their share of crude oil production and for leases, rentals and bonuses. Many of these royalty owners have never seen an oil field and have been in great doubt as to the exact value to themselves of the introduction of numerous practices which are part of present day field operations.

Recoverable crude oil reserves have been increased by several billion barrels due to improved production methods and practices, with income from and value of oil royalties increasing in proportion, according to the booklet.

Letters to the Editor

In your issue of February 22nd on page 52, in commenting on the Consumption paper presented by Mr. Whetsel and myself on February 17th at the A.I.M.E. meeting, the following appears:

> "Several attending the session took exception to the figures, stating in effect they did not believe the figures presented a true picture of affairs."

We would like to point out that we have repeatedly stated in our discussions of world consumption that it is impossible to present an absolute true picture of this situation owing to the meager information available.

During the past five or six years we have attempted to derive true consumption figures of the world outside the United States in the hopes that a somewhat accurate relation between world supply and demand may be determined from time to time, just as it is done within the United States. The importance of the world-wide industry has most certainly reached such proportion as to justify these efforts, and it has been our hope that others would attempt a similar survey for the purpose of comparison.

On the basis of this survey it has been necessary to depend upon statistics available which are often confusing. For example, it is very difficult to account for the rapidly increasing output of Russia and her decreasing exports without assuming that her domestic demands are increasing at an unbelievable rate. If the ten leading consuming countries and the ten leading producing countries outside of the United States would cooperate in contributing from time to time accurate petroleum statistics to some central bureau, great strides could be made toward obtaining a true trend of the world-wide petroleum industry. If we have succeeded in pointing out the importance of cooperation in such survey and are able to see some statistical bureau carry on this work, we would feel that our efforts have had some value.

What we would welcome are constructive criticisms and more accurate sources of information. Inaccurate as our figures are, they are the only ones available to date and we will continue to make them available to the public only as long as no other more accurate information is available elsewhere.

We would appreciate it if you would publish this letter in an early issue of your magazine.

Yours very truly,
V. R. Garfias

Squeaks from the Bull Wheel

Easy

Oh, Fred, the baby has swallowed the matches. What shall we do?

Here, use my cigarette lighter.

Marksmanship Improving

"Melvin! MELVIN!"

"Yes, Mama?"

"Are you spitting in the fish bowl?"

"No, but I been coming pretty close."

Good Turn

"Well, dad," said Jimmy, the Scout, at the breakfast table, "I've done my good turn for the day."

"What!" exclaimed his father. "You have been very quick about it. What did you do?"

"It was easy," explained the boy. "I saw old Mr. Jackson going for the seven-forty train, and he was afraid he would miss it, so I let our dog loose and Mr. Jackson got to the station with three minutes to spare."

Timid Man

"I had a date with a mind reader last night."

"Sure enough? Did you have any fun?"

"No, he just sat around all evening and blushed."

Checking Up

It was a dark and stormy night when the weary husband returned home.

"I've been to every shop in town and they can't match that bit of ribbon for you anywhere, dear," he said to his wife.

"Splendid!" she cried. "I just wanted to make sure that it really was unique."

Hale and Hearty

The quack was selling an elixir which he declared would make men live to a great age.

"Look at me," he declared. "Hale and hearty, and I'm over 300 years old."

"Is he really that old?" asked a listener of the youthful assistant.

"I can't say," replied the assistant. "I've only worked for him 100 years."

Uniforms for Lobbyists

Alabama's legislature is considering a bill which would require lobbyists to wear uniforms so they can be identified, each group wearing a distinctive costume. Here are some of the styles proposed

Railroaders: Overalls, carrying an oil can and a switch lantern.

Public utility men: Carry a water faucet in one hand and a hand-telephone set in the other.

Insurance business: In a rubber coat, high boots, and a fireman's bonnet.

Educational interests: Cap and gown and a coonskin coat.

Bankers: Old gold uniforms and one black eye.

Druggists: A white uniform, carrying tray of lettuce sandwiches and soft drinks.

Medical men: Internes' uniforms, carrying a stethoscope and a bottle of smelling salts.

Liquor dealers: Large white apron, with hoops, resembling a keg of beer, and carrying liquor at least fifteen years old.

Speedy Advice

To the large publishing house came a manuscript with a note. The note was from a woman who requested that her story be read immediately.

"I must have a decision very quickly," she wrote, "because I have several other irons in the fire."

A few days later, her manuscript went back to her with the following message:

"We have read your story. Our advice is to put it alongside the irons."

Repartee

Just before the stage show closed, two chorines had a verbal battle in the wings.

"I've been arguing with you since the show opened," said one, "and I've had just about enough. You simply have no understanding of the finer things. Good living means nothing to you."

"That's a hot one," scoffed the second damsel. "May I ask where you get off to be so high hat?"

"You certainly may," replied the first. "It's because I have a fine background. I'll have you know that I lived at the best hotel in town all last winter."

"Yeah?" meowed the other. "And were the tips good?"

A Real Maneuver

Uncle John watched his nephew and some other little boys playing at soldiers attacking a fort. "Johnnie," he said, "if you and your side can take that fort in half an hour, I'll give you a quarter."

About two minutes later there came an eager cry: "Uncle, can I have that quarter now? We've taken the fort."

"That was very clever," said Uncle John as he handed over the coin. "How did you manage it so quickly?"

"Oh, I just offered the other side a dime to give in," replied Johnnie.

Not So Crazy

A visitor at an asylum was watching one of the inmates pushing a wheelbarrow upside down.

"That's not the way to push that thing," the visitor exclaimed. "You've got it upside down."

"Oh, have I?" answered the lunatic. "I used to push it the other way, and they put bricks in it."

Then It Was All Right

A young lady, finding herself stranded in a small town, asked an old man at the station where she might spend the night.

"There ain't no hotel here," he said, "but you can sleep with the station agent."

"Sir," she exclaimed, "I'll have you know I'm a lady."

"That's all right," drawled the old man, "so is the station agent."

Young Geologist

Father and son were enjoying an afternoon in the country.

"Just fancy, William," said the father, pointing around him, "at one time these fields were covered by sea, and fish were swimming about on the very spot where we stand."

"Yes, papa," said little William, suddenly stooping. "Look, here's an empty salmon can."

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& COOLERS
GOTT Water Cans are the practical way to keep drinking water cool for long periods, protected from impurities and always handy to the job. Snug fitting large removable top, strongly built to withstand rough usage. GOTT Water Coolers have extra large covers and a handy non-leaking push button faucet. Your Supply Store has them, get one today! . . . . . .
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KEEP PURE DRINKING WATER ALWAYS HANDY